

Original Correspondence.

THE CLAY CROSS INUNDATION.

SIR.—The investigation regarding this dreadful affair has been brought to a close, exculpating the manager of the works, but throwing reflection upon certain minor officials "for neglecting their duty under the colliery rules, and recommend that in the absence of any ordinary deputy a well-qualified person shall be appointed to fulfil the duties of such deputy." Without wading through the whole of the evidence it seems difficult to understand the import of this verdict; therefore, it may be instructive to recur to the general circumstances of the case. Mr. Binns is the manager of the present Clay Cross colliery, and was also the manager of the old colliery, including the keeping of the plans, &c.; and it now appears that the plans of the old colliery were fatally incorrect, inasmuch as certain workings were neglected to be placed upon the plan, which workings were in advance of the general face about 40 yards, and it is the unexpected contact with these workings which has produced the fatal event. Now, as various calamities have occurred by new workings coming in contact with old wastes, whose true position was unknown, the subject was mooted during the late discussion for the formation of rules attached to the present Act to avoid such events, and were accordingly made the subject of the 15th general rule, "For keeping sufficient bore-holes in advance, and, if necessary, on both sides, to prevent inundations in every working approaching a place likely to contain a dangerous accumulation of water." The manager, however, in this case, relying upon the plan, imagined he had such an amount of coal barrier as to dispense with the precautionary formality of boring, and this allegation is justified by the evidence of Messrs. Woodhouse, Bean, Jeffcock, and the Government Inspector, Mr. Hedley; and they also allege that if a boring had been carried on it would not have discovered the waste, as it would have been executed on the top coal, whereas the main body of the water was contained in the full height of the seam. A peculiarity attaches to this line of evidence which is material to notice—all their remarks apply to a bore-hole. Now, to approach such a waste as this by means of a single hole would have been as reprehensible as no boring at all, the authentic principle being three holes in the advanced drift—one in front, and one upon each flank, the flank holes bored within 3 or 4 yards of each other, which system would to a certainty have found the waste. With respect to blame attaching to the colliers or the under agents, although a general knowledge prevailed that the old workings were filled with water, yet few or none of these persons might be so well acquainted with the representations set forth by the plans as to form a judgment as to the danger, for this point was not urged in the examination. Viewers in general are very chary in exhibiting the colliery plans, even to their own sub-agents, and colliers are very naturally afraid of incurring blame in raising a question of this sort, trusting implicitly to the conduct of the manager. Undoubtedly, if they had in this case requested an examination by the Inspector, he would certainly have recommended that the exact position of the waste should be tested by one or more bore-holes, and so have averted the calamity; and it should act as a warning to colliers to demand the aid of the Inspector in cases where the position of the respective workings are not to a certainty ascertained, as very little reliance ought to be placed upon plans made many years previous, and with instruments having different bearings to those in present use.—Barnsley, Aug. 10.

A COLLIER.

PRACTICAL PAPERS ON COLLIERY OPERATIONS—No. X.
VENTILATION OF MINES.

SIR.—The proper distribution of air throughout the mine, and the laying out of the workings in a systematic manner, is of far greater importance than the production of a quantity of air, however great, providing it is not justly apportioned throughout the workings. It is not only possible that one portion of the workings of a mine be well ventilated whilst others are not fit for anyone to enter, but this is the actual condition of many mines at the present time. Probably this is one of the greatest sources of annoyance the Inspectors have to contend with, for it renders it necessary on their part to examine the whole of the workings, in order to ascertain the sanitary state of the mine. This cannot be done without much physical exertion, and to expect that the present staff of Inspectors can do so is simply to expect them to perform impossibilities.

As was stated in my last letter, it is always better to have the upcast shaft on the rise of the downcast, and if it can also be on the rise of the workings it is all the better. This is not always convenient, but after the first rank has been worked out it is always practicable where the principle of driving the narrow work to the boundary, and working the coal back from the boundary to the shaft, is adopted. Those who have never tried the principle of having an air-course maintained on the extreme rise of the workings, parallel with the main wagon-road, for the purpose of a return air-course, will do well to do so, and in all probability they will continue to ventilate upon the principle of allowing as much to be done by natural means as can be. Is it possible to conceive anything more absurd than to drag a gas of the light specific gravity of carburetted hydrogen down the angle of the mine past the working faces of, perhaps, twenty or thirty men, and then allow the same current of air to ascend another brow, for the purpose of being dragged down a second time, and, finally, when it has collected all the impurities it can, to pass to the upcast shaft along the main wagon-road, where all the men have to travel to and fro from their work, and where all the horses, drivers, &c., are engaged all the day long? The expense of keeping open an air-course on the rise of the workings is but slight, compared with the advantages it offers, for by this system of ventilation, after the main wagon-road and the level above it have been driven a distance of 300 or 400 yards, a braw may be cut up to communicate with the air-course on the rise of the workings, and the two levels may be used for outgoing currents of air, instead of one being used for the return current, as is almost universally done. This would somewhat compensate for the loss sustained by friction in all air-courses or passages. Another advantage is that the air, after having passed one set of workings, is passed off into the air-course that is not travelled or entered unless for the purpose of examining or repairing it. It also relieves the furnace, or ventilating agent, to a great extent.

On one occasion I found a colliery ventilated upon the principle of dragging the light carburetted hydrogen (which was freely given off) and the heated air down the incline of the mine, and by simply reversing the currents of air, and making two additional divisions of the air, at a cost not exceeding 10/-, I more than doubled the quantity of air with the same consumption of fuel at the furnace, and dispensed with the use of six air-doors. If the mechanical laws of elastic fluids were better understood by colliery managers and others immediately concerned in the ventilation of mines, we should have fewer impracticable schemes attempted, and it would not then be necessary, as it is at the present time, for the major part of colliery managers to prove by experiment, at considerable loss to their employers, whether they can successfully act in violation of the natural or fixed laws by which the ventilation of mines must to a considerable extent be governed.

I will briefly refer to one or two of the most important in getting to the correct principles of ventilating mines. By Boyle's or Mariotte's law the elastic force of a gas or air at a given temperature is inversely proportional to the space which it occupies. Let p = elastic force of a gas when it occupies the space s , $P = \frac{p}{s}$.

The elastic force of a gas at a given temperature is proportional to its density. By Dalton's and Gay-Lussac's law all gases under the same pressure undergo equal expansion for equal increments of temperature. These eminent philosophers ascertained that 100 measures of air expand to 137.5 measures on being raised from 32° to 212° Fahr. Amonton's law is the relation between the elastic force, density, and temperature of any gas. If, then, the volume of a gas be constant, its elastic force will increase; and if the elastic force be constant, its volume will increase for every increase of temperature. Another important principle is that the volume of air discharged from the end of a pipe or tube is directly proportional to the square of its diameter, and inversely as the square root of its length. By these very important principles we are shown the necessity of shortening our air-currents, and having our air-courses as capacious as practicable. According to the laws laid down by these illustrious men, we can obtain twice as much air in a passage containing a sectional area of 40 ft. as in one only containing 20 ft. sectional area—that is, assuming the respective passages, or air-courses, to be of one uniform size and free from obstructions. This principle is as correct as required for practical purposes, and, probably, the violation of it leads to as many lives being lost and to the health of others impaired as the neglect of any other branch of ventilation.

It is often violated by allowing the air-courses to partially fill up by falls of dirt, or by the floor lifting or creeping, or by setting timber to project into the air course, or by leaving tubs standing for a long time together in the air-course; in short, anything that lessens the sectional area of the air-courses impairs the ventilation of the mine, but not in the same ratio as before given, unless the whole length of the air-current is obstructed. I am quite aware that it entails the additional expense of having extra men and extra timber to keep the air-courses their original size and free from obstructions; and that, in the present fearful race of competition which so many are engaged in, it is necessary to keep down all expenses that can be, in order that the colliery may barely pay its way, and bring back the capital expended in sinking shafts and erecting engines. But any saving effected at the expense of allowing the ventilation to be impaired can only be considered as false economy.

The advantage derived from splitting or dividing the air currents, and consequently shortening the distance the air has to travel, becomes apparent from the principles previously given, but its importance demands a further explanation. Supposing that the air-courses are of equal sectional area, the speed of the air currents, and consequently the volumes, would be proportional to the square root of their length; consequently, if we had two air-courses of the same sectional area, and the one was 200 yards and the other 1800 yards long, the proportion of air passing through them, assuming them to be free from obstructions, and all other circumstances continuing the same, would be as 14:1 to 42:4; so that, in round numbers, we should have three times the quantity of air passing through the short air-course as through the long one. Nearly the same difference exists with respect to the drag, or resistance, of an air-current when travelling through the passages of the mine. The rule bearing upon the velocity of currents is that the resistance is as the square of the velocity of the current when the impulse is direct; consequently, if a current of air passes through a passage of the mine at the speed of 3 ft. per second, and another at 6 ft. per second, under the same circumstances, the resistance or drag of the air currents bears the same proportion as 9 does to 36. The resistance or drag increases in the same proportion if higher velocities are attained.

As I have before stated, much depends upon the extent of the workings, the quantity of gas generated, and the number of men and horses engaged, as to what quantity of air is sufficient to ventilate a coal mine; and, therefore, no minimum quantity of air can be fixed. But a few remarks may be offered upon the maximum quantity of air that ought to be passed through the mine in one volume, and the velocity of the currents. It is practicable for the air to travel at a speed of 15 miles per hour, or 22 feet per second, in some of the passages approaching an upcast shaft, where there is a powerful furnace employed. It is hardly necessary to say, from what has been previously adduced, that such velocities are attended with great loss by friction. The maximum speed of the currents in the main air-courses ought not to exceed five miles per hour, or 7.38 ft. per second. If the air-course is of 26 feet sectional area, the quantity of air passed through would be 15,882 feet per minute. This velocity is far too great for a current of air passing by the working face of the miner. I should consider it advisable to split, or divide, a current of air, if so much were required to pass one set of workings that would render it necessary for the velocity to exceed 2 miles per hour, or 2.98 ft. per second.

With these principles before us, can it be wondered at that the furnace, or other ventilating agents, should produce such different results at one colliery from what they do at others, or even at the same colliery, where the air courses are lengthened, and obstructions to the currents of air are allowed to accumulate? It would be quite as reasonable to expect that the same power could move an equal weight on the old pack-horse roads of the last century as upon our modern turnpike-roads, as that it can move the same quantity of air through a tortuous, cramped air-course as through a capacious one, where all is smooth, and of uniform size. Independent of the obstructions offered by having small and irregular air-courses, much loss of air is experienced in conducting a current to the extreme workings of some collieries, from having imperfectly constructed doors and stoppings. I do not wish it to be inferred that I entertain the idea that the calling of a collier can be rendered anything like so safe and healthy as many other occupations, but if it is beset by more than ordinary dangers and difficulties, does it not forcibly point out the necessity for increased vigilance and watchfulness being exercised by those placed in the responsible, and often inadequately paid, situation of colliery managers? In all probability my views and ideas of the duties of colliery managers, &c., will be given in a future letter.

As I have previously stated, the Davy lamp is a sufficiently safe and delicate instrument to detect the presence of fire-damp. A safety-lamp in good condition may be taken into any accumulative body of fire-damp without the slightest risk, whilst the presence of fire-damp can be detected long before it is at the explosive point. For this use its illustrious inventor clearly intended it, and it remains an invaluable instrument for that purpose. The rest of the gases and impurities of the mine that are deleterious to health, may be detected in the atmosphere by those delicate and beautiful organs with which Nature has endowed us—the eye and the nose. The smell is a most delicate test, and by it most, if not all, impurities may be detected before they are very dangerous to the health, although habit may to some extent have blunted our perceptions, and caused us to slight those disagreeable odours which we are so often assailed with in the mine, and which are proved beyond doubt to be life-destroying. I, therefore, maintain that no colliery manager, if he attends to his duties, can be ignorant of the fact that he has a badly ventilated mine under his control. Nor can he deceive himself as to what is required to make the mine tolerably healthy and safe; for by the first law of Nature (self-preservation) he is called upon to remove the sources of danger by ventilation, and not to adopt the temporary expedient of using the safety-lamp exclusively, an expedient that will sooner or later fail, and bring with it the most disastrous and ruinous effects both upon employer and employed. It may be contended that some coal mines cannot be ventilated to render them safe to work with naked lights. If so, I can only say that it has not been my lot to have to contend with any of that nature, nor even see any, although my first situation was to take the underground management of a colliery where one of those calamitous occurrences had taken place immediately before accepting the situation. And, if opinions are worth anything, I give it as my candid opinion that we have no mines but what may be successfully and safely worked with naked lights, excepting on rare occasions, but not if the coal has been partially wrought in the objectionable and dangerous manner previously described. There are several collieries that I am acquainted with in which I should as soon recommend the manufacturing of gunpowder by candle light, as the use of the naked lights in their present state; but if the workings had been laid out in a systematic manner, and all principles of getting coal had not been violated, no difficulty would have been experienced in ventilating them so as to have rendered it safe to work with naked lights.

Having so recently stated my views at considerable length on the causes of explosions and sudden outbursts of gas, I do not feel desirous of recapitulating them, as it might be tedious to those who have read the pamphlet referred to, but it may be necessary to say that one thing should be especially guarded against—that of having more workings open at one time than the current of air at command can effectually ventilate. Whatever your quantity of air, regulate your works accordingly, and vice versa. Do not attempt great things with small means in the ventilation department, or you are certain to meet with disappointment, perhaps grief. A great deal more fire-damp is generated in most mines on their first being opened out than when the coal has had an opportunity of draining itself of this gas. When narrow working is being driven in a fiery seam, it is better to use brattice cloth to conduct a current of air to the working face of each collier. Sometimes in doing this much loss of air is experienced by having the sectional area of the division of the air course much too small, and attempting to force as great a quantity of air through a space of 10 ft. as through one of 30 ft. sectional area. In most cases it is wise to allow a portion of the current of air to escape in its natural course at the point from which the brattice is commenced. Another important consideration is that discipline should be maintained amongst those whose duty it is to attend to the ventilation of mines, by carrying out instructions entrusted to them. It appears hard at first sight to imprison a workman for neglect of duty, but when it is considered how disastrous the consequences are that follow close in the rear of negligence, it must be admitted that it sometimes becomes necessary to take such steps as will deter others from taking a like course.

Since writing the present paper the country is again thrown into a state of excitement by the sad intelligence of the loss of twelve valuable lives, and the narrow escape of many others, by one of those reckless and preventable causes that has wrought such fearful destruction amongst the poor miners of this country. A newspaper article is sometimes written for the purpose of showing how ignorant, thoughtless, and reckless the miners are

as a body. What can we expect when we see men supposed to be educated having a furnace in close proximity to a shaft lined with timber, but that the miners engaged at a place, so managed, should be reckless also. I am grieved at having an opportunity to make such remarks as these, and justify myself for so doing by the necessity which exists for having a more intelligent class of colliery managers than at present. In my last letter will be found an effectual safeguard against such accidents as the one under consideration. What would have been the expense, compared with what it will now cost, to say nothing of the grief occasioned and the loss of twelve valuable lives?

Jos. GOODWIN,

MR. HUGHES'S SYSTEM OF VENTILATION.

SIR.—In last week's Journal I find that Mr. Hughes has replied to the remarks offered by me on his principle of ventilation. He says that "I keep from view the fact that if a pipe happens to be broken it is an accident that may easily be remedied, and that the result would not be more dangerous than the closing of the level if the pipes were not there, and that the tendency of the pipes would be to keep the air-passage open." Mr. Hughes is doubtless so well acquainted with the mechanical laws of elastic fluids that it will not be difficult for him to see that if a pipe, or the joint of a pipe, becomes deranged, the air will escape at the nearest point, and find its way back to the upcast, whilst it would allow the workings beyond that point to become charged with an explosive gas. Mr. Hughes probably not having seen the danger consequent upon moving large bodies of accumulative gas, may look upon this as only of slight importance. It is easily seen that the floor lifting to an extent that would derange the strong joints would still leave space for the air to pass in its usual course; in one case the certain tendency would be for the air to rush back to the shaft, there being no doors or stoppings to prevent it, whilst in the other case it would continue in its proper course, the effect would be to diminish the quantity passing. Mr. Hughes appears to have overlooked my main objection to his system—that of it being simply impossible for air liberated beyond the old workings to find its way through, as he has studiously avoided referring to it. I have not the slightest wish to do anything that may prevent Mr. Hughes's system having a fair trial, but I wish it to be distinctly understood that my opinion is that were it tried to-morrow it would prove a complete failure in the ventilation of collieries. I am called upon to make these remarks, so that there need be no misunderstanding as to what my views are upon the subject.

The latter part of the letter refers to Mr. Brough, and not to anything that I have either said or written, as, whatever Mr. Hughes's system of ventilation may be, he is perfectly right in his remarks upon the loose manner in which quantities of air are spoken of in reference to ventilating collieries; but I should think Mr. Brough will not allow so important a statement to pass without offering some explanation. Jos. GOODWIN,

VENTILATION OF COLLIES.

SIR.—When a quotation is made use of it should be fairly given; with the major part of the sentence is a reticence that may reverse the writer's meaning. Mr. R. H. Hughes, in speaking last week about his method of ventilation, says that Mr. Brough was of opinion "that 200,000 cubic feet of air per minute would not have prevented the Risca explosion." He should have given the context, and then the statement would have been clear and easy of comprehension. Mr. Brough, in his report, makes the remark "that 200,000 cubic feet of air per minute, or quantities of even greater magnitude, would have been altogether insufficient to have saved this pit, or, *ceteris paribus*, any other colliery, from explosion, under the fearful conditions that a defective lamp and a sudden emission of inflammable gas were simultaneously found in juxtaposition." This is intelligible and reliable enough; gas may come off in such enormous quantities, and with such suddenness and violence, that if an injured lamp should happen to be present at the moment the gas would inevitably fire—even though at the same time fresh air should be passing in great abundance. It has been proved and established that gas does come off in this alarming manner, and much more frequently than is generally supposed. Mr. Hughes appears to entertain the idea that it is a normal condition that fire-damp should *always* be escaping, and he seems to have fixed on a certain determinate proportion of the dangerous element; for example, that for every 100,000 cubic feet of air that is made to travel through a mine there must necessarily be 5000 cubic feet of carburetted hydrogen issuing from the coal!

It may be well to acquaint that gentleman that in some fiery mines gas is not met with for weeks together; not for months sometimes; even much longer periods may elapse, and it does not make its appearance in any dangerous quantity; but, when least expected, it may suddenly pour out of the coal in overwhelming amounts. In such cases a damaged lamp would be destruction, whatever might be the intensity of the ventilation. It would be superfluous to say that these remarks are not intended to disprove the value of abundant fresh air in a coal mine; on the contrary, they are on the side of excess, and show clearly enough that the approximation to safety is in exact proportion to the quantity of the atmosphere that is introduced. Undoubtedly, in the maximum degree of ventilation is found the greatest measure of safety underground.

Aug. 13.

HARD TAMPING, AND ACCIDENTS IN MINING.

SIR.—In reference to the subject of blasting, I wish to occupy a small space in the Journal. From 25 years' practice, it is my firm belief that, in 99 cases out of 100, where accidents occur through blasting it is owing to the undue attention of the miner, either in tamping or charging. Habit and custom harden and blind men from seeing their own danger.—1. In charging with naked powder great care should be taken to clear away all the particles of powder that may adhere to the hole, before attempting to use the tamping-bar.—2. Care should be taken in the selection of tamping stuff; good stiff clay, with sand, shale, or any other substance, not hard, binds together and confines the charge better than a harder substance.—3. Hard tamping is not required to make a hole throw its burden, if the hole has been placed with proper judgment; no hammer should be used in tamping.—4. Hard tamping often cuts the safety-fuse, and brings to life the agent of destruction.—5. Hard tamping often bruises the safety-fuse, or presses it into vugs, or joints, that are sometimes found in boring, and thus it often hangs fire—sometimes not firing at all; thus the safety-fuse and the maker get a bad name. The miner may be killed or crippled for life. I have known explosions to take place in the first, second, and third series of tamping, the hole throwing the whole of its burden, just as well as it could have done had it been hard tamped to the top, which is the common practice.—Aug. 10.

W. R.

AIR MACHINERY.

SIR.—In the Notices to Correspondents, on Aug. 3, enquiries are made as to the size and weight per fathom of air-pipes for carrying off the smoke from an end 200 fms. from shaft. I have driven much further than this, and risen 30 fms., or more, to hole to old mines, with 6-in. square wood pipes $\frac{1}{2}$ in. thick, worked by a duck machine—that is to say, a box, or cistern, working in another box or cistern, partially filled with water, with the air-pipe reaching above the water—a contrivance that every miner is acquainted with. The timber required for this would be about $\frac{1}{2}$ ft. to the fathom, (say) cost 1s. per fathom. If the pipe were of cast-iron, $\frac{1}{2}$ inch would be a sufficient thickness, or (say) 72 lbs. to the fathom, or 5s. per fathom. Very little power of either water or steam is required to work such a machine, and there is far less difficulty about the matter altogether than is often supposed; almost everything depends on keeping the joints tight, which requires a little care and attention. I think eventually some more extensive and efficient plans will be necessary for the ventilation of deep mines and long levels. I have heard discussions in Gwennap, 30 years ago, at the Consols and United Mines; it was then thought that a powerful fan fixed at the surface, communicating by means of pipes with all parts of the mine requiring air or cooling properties, would be best. But lately I have noticed the patent of Mr. Hughes's, for something in the shape of a gasometer, to give out (say) 1000 ft. of air to a stroke, with a main service pipe running down the shafts, and branch pipes taken from it, where it was necessary, to the levels. I do not see any difficulty in working mines, with the assistance of such a machine as this, to the depth of 500 or 1000 fms., as it would be to a mine what a gasometer is to a city, only supplying air instead of gas, and a very little power would be necessary to work it. Suppose the dome to be (say) 20 ft. diameter, with a 2-ft. stroke, or rise, it would work in water the same as the duck machine now does. The motion might be regulated to suit the requirements of the mine, and the circulation of air underground would be both regular and incessant. It appears to me that such a machine would be a great acquisition to mines, securing to the working miner healthful air and immunity from smoke, and to the shareholder increased profit from the increased health and power

of his workpeople. At any rate, I think the subject is worthy of consideration.—*Aug. 9.*

MATTHEW FRANCIS.

VOLCANIC ACTION.

SIR.—Perceiving that Mr. Mark Fryar has not given any example of the calcining product, resulting from volcanic action on an ironstone bed or seam, I beg to supply your correspondent, Mr. Evan Hopkins, with a most remarkable and splendid example of this phenomena in this locality, where the igneous product is to be seen, open to the day, at least *forty feet* deep, of a clean, solid seam of ironstone (of course magnetic). It is daily being worked, and the full depth of the seam not yet got at. Should your correspondent desire to see and examine this, perhaps, the most remarkable ironstone deposit in the kingdom *in situ*, I shall be happy to accompany him to the mines.—*August 14.*

T. A. BARNES,
Mining Engineer, Whitby.

VOLCANIC ACTION.

SIR.—I am much obliged to Mr. Mark Fryar for his reply, and I shall do myself the pleasure of calling upon him on my next visit to Glasgow. I had to inspect some of the Ayrshire collieries and blackbands a short time ago, but I did not see any effects from volcanic action, although I met the usual changes resulting from the moist contact of dissimilar substances. These changes may be often observed in heaps of ferruginous substances on the surface of old mines. The raw and wet products become by degrees anhydrous, often exfoliating and blistering, and finally converted into dark oxides or red protoxides, according to the nature of the elements with which they were combined. Therefore, it does not follow that because we oxidise and melt minerals by means of fire that all natural oxides and metals must be the products of fire or volcanoes. On the contrary, we find both these and many other products forming daily in our subterranean works, in all parts of the world, by means of the natural wet process of Nature. Those operations in the crystalline rocks below are as constant as the action of the sap in the vegetable kingdom above; and it is much to be desired that those who undertake to instruct the rising generation of miners should study the works of Nature and applied science, and avoid all loose and groundless assumptions. The igneous theory is not only totally unnecessary in the industrial schools of mining, but is now all but exploded. On my return from Ireland I expect to go to Scotland. —EVAN HOPKINS.

Aug. 15.

THE CORNISH SYSTEM OF WORKING MINES.

SIR.—I have often remarked on the ancient and very defective system of working mines in Devon and Cornwall, and am surprised that it should be permitted in the present age in poor and deep mines. Crooked shafts, with chains and kibbles to raise ore, and ladders—ways for the men to descend and ascend, may serve the purpose in shallow mines containing rich bunches of ore, but such a system in deep mines destroys the health and strength of the miners, and wastes the capital of the shareholders. Were we to adopt the same mode of hauling the stuff, and the men be permitted or compelled to climb long ladders in the iron ore, ironstone, and colliery districts the works would have to be closed as unprofitable. Cornishmen have paid a very great attention to their pumping appliances, but apparently have neglected all other and equally essential applications to render deep mines containing only ordinary class ore profitable. Consequently, Cornwall is considered half a century behind the iron and coal districts in the system of working. Iron ore, ironstone, coal, &c., are extracted and hauled from the depth of 100 to 200 fms. and upwards, and delivered at prices varying from 3s. to 4s. per ton. The products and the men are hauled up at the rate of from 100 to 150 fms. per minute. Accidents in shafts are exceedingly rare in well-regulated establishments.

The paying gold quartz mining companies in Australia are conducted principally by the Welch and the North countrymen, or men well trained in the economical system adopted in the iron and coal districts. Kibbles and barrows are avoided as unsuitable for dispatch and economy. The stuff brought from the depth of about 144 fms. at Morro Velho is only worth about 3s. per ton, yet by means of the economical method adopted there the extraction of this low quality ore leaves from 50000. to 60000. per month profit. Hence Cornwall is not alone behind the iron and coal districts of England, but also behind some of the mines in the interior of South America. Cornishmen as a body are doubtless equal to any other men to carry on mining works, but unfortunately they take their own system as a standard of perfection, and are very prejudiced to everything but what is adopted in their own county. Cornish miners get weak and sickly at from 30 to 40 years of age, in consequence principally of their ladder-work, which consumes more than half their strength and permanently injures their health, hence they become unserviceable for foreign mines. The North country miners are stronger, and as they are more accustomed to the system of mining adopted in the iron and coal districts they are preferred to Cornishmen. I have been induced to make these observations from reading a letter in the last Journal on Great Wheal Alfred, by "A Shareholder" (Penzance). In that letter we find the following very just remarks:—

"Instead of having the best possible means of drawing the stuff, they have one of the worst, for instead of cutting down, straightening, and making larger a small and crooked shaft, they have made it worse by cramming a double skip into it, thus causing constant breakages," &c. "A great contrast when compared with some of the best plans in the North of England." "They have no engine or cages for raising and lowering the men." "Imagine the time daily occupied, to say nothing of the fatigue the men endure, in descending perpendicularly 250 fathoms to do their work, and reserve sufficient strength to climb to surface again." "Now, I venture to say that were the iron mines and collieries to discard their means of raising and lowering their men and raising the produce, and adopt the Cornish means, they could not render the produce for double, treble, or quadruple their present price."

Our iron ore miners and colliers scarcely believe that such an expensive, inconvenient, and crude system of mining is still in existence in England.

Occasional rich bunches of ore have been the ruin of many mines. A system should always be adopted to make the ordinary class ores pay, the rich ore can take care of itself. An ordinary labourer can make rich bunches of ore pay, but we want judgment, capacity, and economical system of working to make poor ores remunerative, be they gold, silver, copper, lead, sulphur ore, iron ore, coal, or any other products.

If the Great Wheal Alfred and other deep poor mines are to be further prosecuted, I would recommend the shareholders and the lords of such mines to place them in charge of the North countrymen, to work them according to their method. The pumping-machinery and the dressing may be left in charge of Cornishmen. If this plan is adopted, the western part of Great Wheal Alfred and many other old mines now wrought at ruinous losses may be rendered highly remunerative, and permanently beneficial to the country.

15, Clarendon-gardens, Maida-hill, Aug. 12.

MR. ENNOR ON THE MINES OF PORTUGAL AND SPAIN.

SIR.—My old friend, and your valuable correspondent, Mr. Ennor, according to his account in the *Mining Journal* of last Saturday, has apparently been sadly imposed upon in his late trip to Portugal and Huelva, in Spain. The perpetual examination of the baggage night and day in travelling through Spain from north to south, from province to province, is to my personal knowledge, very annoying. Again, to have to pay 8s. in Lisbon for a *vise* before we can embark for home is to an Englishman outrageous. Mr. Ennor, from the want of knowing the languages of these countries, and other drawbacks, has been much more victimised by his guides than ordinary travellers. He states—"My passport cost me upwards of 20s. in money and loss of time." That is during three or four weeks travelling!

Those who have been sent to these countries from time to time to see mines offered to English capitalists without knowing the language, or even possessing a correct knowledge of the true character of the deposits and the rocks they had to inspect and report upon, have necessarily been much imposed upon, to the great injury of English capitalists as well as to themselves. They are placed more or less at the mercy of interested interpreters. Mr. Ennor in his communication refers to the great mistake committed by some reporters calling the sulphur deposits "flat beds of sulphurous ores." When we consider the very loose way in which opinions are frequently formed and expressed in many of these reports we need not be surprised at such mistaken ideas. Even Mr. Ennor himself, in pointing out the mistake, says that the "sulphur lodes are embedded in a beautiful white-edged rock killas," thus implying that they were *beds* of ore in the slate. I am not astonished at Cornish miners making such mistakes, and applying improper terms to formations with which they are not acquainted, as they seldom have the opportunity of studying well-developed laminated rocks in their own country, such as gneiss, micaceous and argillaceous schists, and the various veins of granite, quartz, porphyry, pyrites, &c., enclosed therein. The sulphur veins or bands in Wicklow are like the Huelva sulphur ore, enclosed in argillaceous slate, having the same structure and bearing as the bounding rock. However, the Huelva masses are not so uniform in width and bearing as the Wicklow, but are much larger, and generally of a lenticular shape, bent and twisted laterally in conformity

with the planes of the lamination of the rock in which they are enclosed. The masses of ore have been formed on edge, like the laminated structure of the bounding rock, and not embedded or deposited in flat beds. The depth of these masses are unknown. The copper is found principally deposited or precipitated within the lamination of the sulphur ore as a black and blue oxide and sulphate. The character of these masses are in accordance with iron pyrites lodes—that they do not change into copper lodes in depth, but continue as iron pyrites or sulphur lodes. The bottom of the Rio Tinto ore formation, which is upwards of 100 fathoms deep, is of the same nature as it was above. Indeed, I have witnessed the unbottoming of several iron pyrites lodes of no small size at depths varying from 1000 to 1500 ft. at Marmato. Before Mr. Ennor makes another visit to Spain I would strongly recommend him to inspect the sulphur mines of Wicklow; he will learn there many things connected with sulphur lodes that cannot be acquired in Cornwall and Devon. Your correspondent, Mr. Gunther, has given the best description of the rocks and mines of Huelva of any I have read. Mr. Gunther is one of the very few who appears to understand the true character of the primary slate, and who does not confound this formation with stratified beds or deposits.

In order to ensure profitable results from sulphur ores, whether at home or abroad, they must be wrought on the same scale, and on the same economical principle, as we do in our iron ore deposits and veins. All the stuff moved in wagons from the workings to the final delivery, and at a total cost not exceeding 5s. per ton. The Cornish system of working is as inadmissible in sulphur mines as it is in our iron and coal works. I presume that they are only ascertaining the depth, width, and the value of the ore at the Lagunazo Mine before deciding on the future and profitable operations. This may possibly account for the state of things at Lagunazo represented by Mr. Ennor. I cannot believe the worthy Chairman and his colleagues would allow the capital to be wasted in merely exploring, unless the company was well prepared to carry on the works on a profitable scale. However, without railways to convey the product to the shipping ports, the operations will have to be confined to the richest and smallest portions of the masses, and if not attended to with the greatest care and economy, and managed by efficient practical men, accustomed to heavy products of low value, will frequently incur very heavy losses instead of leaving a profit, as already stated in many of my reports. —EVAN HOPKINS.

Aug. 13.

MINING AND MINERS IN SPAIN.

SIR.—Having visited Spain several times, I naturally read the critical politico-geological letter of your valued correspondent, Mr. Nicholas Ennor, with great interest, and cordially agree with his sensible remarks relating to some features in the management and working department. In the Huelva district, however, where I examined the rocks and mineral deposits, not only at surface, but also underground (having been underground at the mines of Rio Tinto, Tharsis, St. Ilmo, St. Miguel, La Concepcion, Pena de Hierro, El Castillo, La Union, La Coronada, &c.), I did not feel justified to apply the term "lode" to most of those deposits, many of which are accompanied by a characteristic massive crystalline rock (r. porphyry), but preferred, in my description in the *Mining Journal* of 1859 (signed "Julius"), to retain the Spanish term "masa," and presuming that Mr. Ennor, by "sulphur deposits," means those very deposits of the Huelva district, I should feel obliged if, for the sake of clearness, and for my own information, as well as that of others, Mr. Ennor would kindly mention those deposits in that district which unmistakeably are lodes. With respect to the change in *depth* of those "masas," it is worthy of the most careful consideration, whether Mr. Ennor's theory (that they change into quartz and copper) be the correct one, or another which, from a multiplicity of facts, draws the conclusion that those deposits in depth will wedge out, or change into mere "impregnations," at a comparatively shallow depth: from what I have seen I incline to the latter opinion. Such a keen and practical observer as Mr. Ennor ought to give us some more of the results of his investigations in that interesting country, and I hope that he will do so.

G. J. G.

WHITE GUNPOWDER.

SIR.—Notices have recently appeared in several journals of an invention by M. Augendre, which consists in substituting a mixture of chlorate of potass, ferro-cyanide of potassium, and cane sugar for the ordinary gunpowder. Ten or twelve years ago I used a similar mixture for the same purpose, and only laid it aside on account of the danger attending its use for fire-arms, as it easily explodes by friction, although the notices referred to state that such is not the case. I, however, on one occasion got severely burnt with it from that cause, and beg the favour of your insertion of this as a caution for others who may wish to experiment with it. The best way to prepare it is to moisten the ingredients before grinding them together (this is better than grinding them separately and then mixing them), and then drying by a very moderate heat. I found that it answered better without the sugar, as by leaving that out and using a different proportion of the other two ingredients to that used by M. Augendre a powder is obtained that is more powerful, and leaves scarcely an atom of residue after firing.—*Bury, Aug. 12.*

A. Z.

NORTH WALES SLATE QUARRIES—No. VII.

SIR.—When the Yspetty and Penmachno estates belonged to the late Lord Mostyn several small trials were made for slates, the indications being such that led many to expect a fine discovery. His lordship instructed a near relative of the writer to examine a few places; and although many years have passed the writer can well remember the pleasures and the great travails of that day. In these fast-travelling days it would be but a journey of a few hours, but then it was a theme for a schoolboy's boast, of astonishing distance, and of marvellous scenery. It was summer, and the first time I had ever seen rocks inspected, and well can I remember the chasm of merry birds; a golden sun with a cloudless sky; deep-laid vales, richly gilded with flowers; pastoral scenes with blossoms of many hues, and carpeted with the softest of mosses; the liquid poetry of mountain streams; the cool, soft, and balmy breezes of the upland heights; the thousand carols in the sylvan woods, mightily swollen into one harmonious anthem; with one shepherd's cot far in the wilds, half hidden in a secluded nook, a stranger to all save bleating of flocks, the bubbling of a rivulet, and the bark of watchful dogs. Such are the associations of that eventful day; but, alas, since that visit to the lovely hills and green valleys that were so charming many have gone to their long homes.

In the river between Pentrefelin and the falls of the Conway are several seams of great softness and of a good colour, but too unimportant in size to prove remunerative, were they not deficient in other qualities requisite in slate. They are small in size and, in most cases, deficient in feet and backs.

HAFOD WRYD.—This was instructed to examine and report upon this seam, which is of a great size, extending from the Machno Vale to the mountain side above Bryn Crug. The line of split in this is the same as that of its stratification, consequently it will not split into slates. A prospectus and reports were lately handed to me, and I find that two practical agents, from Llanberis and Penrhyn, have appended their names to reports, and speak of it as a "slate and slab quarry, for the making of slate (chiefly) and roofing-slates." But in the same prospectus I find that Mr. Hughes (Craftman) reports it as a slate quarry only. Why, in the name of common sense and honesty, should there be an attempt to prove this to be a slate quarry? The two gentlemen alluded to may as well say it is granite or marble. I fully concur with the three reports as to the size, position, and advantages of this place. The best part to open a quarry is decidedly at Aber Cerrant. The seam is so great, with a plentiful supply of water, and the demand for slate such that this may be worked to a good profit, leaving out of calculations slate, which will never be got there. The quality is well adapted for chimney-pieces, billiard-tables, &c.; and I think the present proprietors cannot do better than convert the produce of this quarry to slabs for those purposes.

PEN-BEDW.—This is a trial for slate about 1½ miles from the foregoing one. A gentleman requested me to inspect this previous to his applying for a "take," which was represented to him as a place of great promise. It appears that slates and slabs have been got from this quarry, but not in sufficient quantity to pay the expenses of getting. After examining the locality and seam, I advised him not to apply for a "take," nor have anything to do with it. Since that time, I believe, no other attempts have been made, and, doubtless, slates must be more scarce ere anyone will hazard his money in such a trial.

MACHNO QUARRY.—This was recently offered for public competition. The seam here is of a great size, and few are the places that Nature has done so much for in setting slate in such an advantageous position for the extraction of blocks. I should have been glad to say that the proprietors had availed themselves of this to do the best with such a favourable position, but very contrary, indeed, is the fact. The elevation of the ground is gradual, with a fine throw for refuse, and the backs, in nine cases out of ten, are regular. With all the available advantages, in few places is want of skill more manifestly exhibited. This quarry has several times changed hands, consequently it would be unfair to attribute the mismanagement to any one of the proprietaries. It appears that the first adventurers commenced operations at the top openings, and threw a great quantity of refuse on the seam, which will have to be removed again. Judging from the appearance of the present mode of working, some of the refuse heaps are about to be removed. Another great mistake in the conducting of this quarry is the great depth of the galleries; in fact, they appear as if intentionally driven to form one great depth. Also, instead of having only one loose end there are many, which in course of time naturally lead to difficulties. The present conductor does all in his power to clear and form the quarry to regular galleries. The quality of this stone is soft, with a very dull sound; the colour is grey, with a tolerable split. The stone is better adapted for slabs than for slates, and in this few can be compared with it. If care had been taken to open this quarry on the best scale it would have been a good paying quarry; as it is, I should scarcely think that the profits are great. By clearing the lowest part, and keeping the loose end sufficiently forward, it may be long before a more profitable condition. The monthly quantity of slates and slabs got out is great; and every effort is being made to meet the present demand. But, with all that is done here and elsewhere, the supply is far short of the enormously increasing demand.

Since the commencement of these papers, I have been informed by a respectable capitalist that one slate vein already noticed has increased in bulk two-thirds of its original size,—a phenomenon lately discovered by one who wishes to be employed as manager of

the same. A very gratifying discovery to be sure; and it is to be hoped that the pockets of the adventurers will not be emptied until the fact be known.

CYMB.

CARN BREA, AND GREAT TREVEDDOE MINES.

SIR.—Your readers will doubtless remember some exceedingly interesting papers which appeared in the Journal a few months since; one of them, compiled with the assistance of Capt. Daw, furnished valuable statistics respecting the detailed cost of the tin produced at Carn Brea Mines, and my object in referring to it now is to institute a comparison between the two mines above named, and to direct the attention of the mining world to the startling announcement in last week's Journal—but of which I have seen no official confirmatory account.—The discovery at Trevedoe of a rich caunter lode, said to be worth upwards of 100*t.* per fm. Should this report be confirmed by the manager or purser, and the lode continue rich, I do not hesitate to say that Great Trevedoe will be one of the finest mines in the world.

I will now give my reasons for this opinion, by referring to the workings at the two mines to the present time. Carn Brea tinstone, as broken from the lode, is worth (say) 20*s.* per ton, yielding 40 lbs. of black tin to the ton; Trevedoe, 4*s.* per ton, yielding only 8 lbs. to the ton; but Carn Brea lodes are from 1 to 5 ft. wide, while Trevedoe is 20 to 25 ft. wide, and thin throughout. The cost of steam-power at Carn Brea, for pumping, stamping, and winding, is (say) 15,000*t.* per annum, these figures are represented by the small sum of 150*t.* to 200*t.* a year, the whole of the works being above the water level there is no expense either for pumping or winding, and a powerful water-wheel works the stamps. Then, as to candles, which at Carn Brea form a heavy item in the cost-sheets, at Trevedoe amounts to a mere trifle, the works being carried on by daylight, in an open cutting, or rather, cavern. The saving in gunpowder at Trevedoe is almost as considerable; the lode being of such an immense size, a charge of powder will bring down ten times more rock than in the confined narrow lode at Carn Brea. Again, the great depth of Carn Brea involves an expense for wear and tear to machinery of which Trevedoe knows nothing, and occasions many other items of cost which will readily suggest themselves to mining men. A new water-stamps, with 48 heads, recently set to work at Trevedoe, will reduce 100 tons of tinstuff per day. Now, looking at these facts, so imperfectly stated from memory, and without any figures before me, if this caunter lode continue rich, I see no reason why Great Trevedoe should not stand A1 for the production of tin, and return from 50,000 to 100,000*t.* worth of tin per annum.—*Aug. 13.*

AN OCCASIONAL CORRESPONDENT.

GREAT WHEAL ALFRED.

SIR.—As you were good enough to publish my last letter, I am induced to trouble you with a few more remarks, which not only concern this mine, but all deep mines.—1. I am one of those who consider that where there are two pumping-engines in a mine each one should have perfect pitwork, and each should lift their water to their adit, so as not to be in the position of this mine—that when one engine is idle both may as well be.—2. I also consider the fewer angle-bores required the better, not only as regards a less quantity of fuel, grease, &c., being required, but also that less breakages will take place in the mine. This is the reason of the great value of a perpendicular shaft.—3. I believe that machinery may easily be brought to bear in the sinking of shafts, especially so that it shall not only be more expeditious but also considerably less expensive; indeed, I see no practical obstacle to prevent shafts being sunk 10 or 12 fms. in the time it now takes to sink 1 fm.—4. I believe that a time will come when Cornish mines will be worked with profit more than double the depth of this mine, which mines will probably not only have engines but also employ horses underground, not using the latter, perhaps, in every level, but in the main levels, which levels, it is likely, will be carried wider and higher.—5. I believe that when the time alluded to comes mining will not be so much of a speculation, but that a greater certainty will be derived from it, because it will be a science better known; when it will not be considered so much as it is now that a "good mine makes a good captain," but more in the light of the speculation in shipping, where it is a well-known fact that a good captain will make a ship give profit, whereas a bad one will bring ruin on its owners. Now, if the time to which I have alluded ever takes place, the man who can see how to use, and does so, the appliances I have enumerated in their right place will be the man to have as manager in a deep and extensive mine.

I see, from a circular I am favoured with by Mr. Nichols, that Capt. Trelese recommends driving the 142 fm. level east, whilst the agents of the mine would recommend the 133 fm. level east, but I would rather see the 180 fm. level driven east to the cross-course, and, of course, Field's engine shaft completed to the 180 fm. level. I have heard from some people, who object to raise and lower the men by a skip, say we have no shaft to put a man-engine in, yet I see by the plan that we have already no less than seven shafts as deep as 150 fathoms from the surface. I perfectly agree with the remarks of "Justitia," especially as to the way of winding-up a mine, seeing that I am in a mine where I have lately been sued by a creditor, although the purser has 200*s.* of our money in his hands.—*Penzance, Aug. 13.*

A LOCAL SHAREHOLDER.

GREAT WHEAL ALFRED—LONDON MANAGEMENT.

SIR.—I am sorry to trouble you to insert another letter from me in

[AUG. 17, 1861.]

and proved not to be able, with its enormous necessary costs, to pay its own expenditure—a most substantial reason for stopping—and, I say it with regret, I think stop it will. Sinking a new shaft in the western ground is a very good speculation, requiring time and money, yet well worth the attention of those who wish to go further.

Levant, Hayle, Aug. 14.

JAMES HOLLOW.

GREAT WHEAL ALFRED.

SIR.—In looking over the Journal of last week, I find a letter from Mr. Kevern relative to the working of Great Wheal Alfred, in connection with my report. In the first place, it states that Mr. Hollow had my report all “cut and dried” for the occasion, and that I was a very improper person to have been employed by the committee to have inspected the mine, having previously done so for the lords; and it is further stated that no man in his right senses would recommend driving the 142 east, and from what I can gather from the letter, it looks as if Mr. Hollow and myself had some ends in view for stopping the mine. This I positively deny; and, before such assertions are made, Mr. Kevern should procure my report and letter to the committee, when it will be found that I did not only recommend driving the 142 east, but also driving all the levels to the west of copper-house shaft below the 200, likewise to resume the 200, which has been suspended for some time; and also advised them not to stop the mine, but carry out what I had suggested; and that with proper management and economy I consider it would entail but very little loss to the adventurers. This certainly does not look to secure Mr. Hollow’s purpose of stopping the mine. With regard to the driving of the 142 east, which I have recommended in my report (and all I have said on the matter can be borne out by facts) I can assure Mr. Kevern that if I have not the confidence of him I have of many others, and am not one, he insinuates, that would make a one-sided report for any of his profession, but trust to adhere to the principle and line of conduct which I have ever pursued with regard to reporting on mines, and give an impartial report, as I have done in this matter, without fear of contradiction from any quarter whatever.—*Hayle, Aug. 12.*

THOMAS TRELEASE.

TOLVADDEN MINE.

SIR.—From the interest I have always taken in this mine, I trust to be excused for intruding a few remarks on the recent important discovery that has taken place in the 67 fm. level. The ore from this place is very rich; in fact, some of it would make a produce of 60 to 60 per cent., but the parcel of ore, as raised from the orey part of the lode, will average about 18 to 20 per cent. This is put to pile as raised, without being dressed at all. The course of ore is not quite so valuable as when first cut, but still worth from 50/- to 60/- per fathom. About 12 fms. before the extreme end of the 67, at the 60, a winze is being sunk, which is now producing 1½ ton of the same quality ore, and is only about 7 ft. This is very important, and showing that the same rich course of ore is extending. In some districts this very rich ore would not attract so much notice; but when it is considered what Wheal Fortune and Wheal Neptune returned to the shareholders, very much importance is attached to this rich discovery at Tolvadden; and I hope and believe that those shareholders who have stuck to the mine through good and evil report will be rewarded for so doing. The other parts of the mine are looking better than for some time past.—*August 14.*

EDWARD COOKE.

WHEAL MOYLE.

SIR.—Having attended the meeting of shareholders on the 8th inst., it may not be uninteresting to those of them who were not present to have a few particulars relative to the present and future prospects of this mine. A call of 4s. per share was made to pay off all existing liabilities arising from the erection of engine, 16 heads of stamps, burning-house, and laying down floors for dressing, &c. These requirements are at all times heavy items of expenditure, and take more time for their completion than is generally calculated upon. The costs for the future will be comparatively low, while the returns will leave a monthly profit, therefore no further calls are expected. The stope are turning out very well. A few days since a well-defined lode was met with in a winze sinking towards the 12 fm. level, worth about 30/- per fathom for tin and copper. A cross-cut is now being driven in the 12 to intersect a few fathoms further east in about 3 fms. driving, when it is hoped to be found equally good. It must be remembered that all the operations as yet have been in ground that has been partially wrought by former parties. In about a month the shaft will be down to the 20, or 50 fathoms from surface; at this point the lode is expected to be met with, when it will be driven on both east and west in whole ground. When we consider the character of this lode in the 12, together with the character of the same lodes in the adjoining mines, which have given such enormous profits, it is not unreasonable to expect an improvement in Wheal Moyle, in the 20. Taking the opinions of several disinterested mining agents, together with what I have personally observed, although it has taken rather more time to develop the various points than at first calculated upon, I am more satisfied than ever that Wheal Moyle will become a first-class property, and that I believe without calling on the shareholders for another shilling.

EDWARD COOKE.

WHEAL LUDCOTT.

SIR.—A correspondent, subscribing himself “A Speculator in Lead Mines,” in your valuable impression of last week, appears anxious to obtain some information regarding the state and prospects of this mine, and, in order thereto, has asked me to furnish a report thereon. Now, Sir, it would be easy for me to comply with this reasonable request, as I could do so and furnish a report of the mine equal in all respects to that submitted to the last meeting, but what of this?—the sum total of a report is the great essential after all. A report descriptively may read very well, but what is to result therefrom is a very important question, and one that is always asked, but not so easily answered. I presume the principal cause of the drop in these shares, or that which has been made the instrument to that effect, arose from my declining to affirm positively in my report to the last meeting that the usual dividend of 4s. would certainly be paid at the next meeting. I simply regarded it prudently on my own behalf to decline the responsibility of such a position, not from any want of confidence in the resources of the mine, but entirely from the disturbed state of the metal market, over which I have no control. I stated in that report the reserves of the mine were quite equal to any former period, and that statement is correct, as will be proved by subsequent returns. I stated, also, at that meeting, but not in the report, that my decided opinion was that at the next meeting our position and prospects would be in advance of the present, and this I flatter myself will also be found to be correct. There is another question which has frequently suggested itself to my mind in reflecting on the unparalleled depression under which this mine has laboured—Is it not too productive in lead ores? The epithet “impossible” has frequently saluted my ear, and, possibly, the ears of others, prefixed to the remarks on the extraordinary productiveness of the lodes in this mine, by many disappointed individuals; they cannot, they say, go on at this rate, and continue, there will certainly be a reaction, &c. Now, I answer, in reply to this, there is no ground for reasonable apprehension in the appearance of the mine. Its prospects are as good and its reserves as great as when we commenced to pay dividends, notwithstanding the vastly increased quantities of ores we have been necessitated to raise—more than was required at the commencement—to pay the usual dividend of 4s., consequent upon the drop in the price of the ores and the increased expenditure of the mine. Another exception, I have been told, has been urged by parties in London, which has tended materially to depress this stock, and that is our contiguity to Wheal Wrey. It is true that our situation is in immediate contiguity to that mine, and whilst I would refrain from offering any remark on that property, I at the same time affirm that we are surrounded by, and associated with, a set of circumstances and influences that have no existence whatever in that concern, and by whomsoever such information was communicated to London should be regarded henceforth with suspicion, either as a prejudiced or incompetent authority on all matters of this kind. Part of the proof required in support of some of the foregoing statements was taken yesterday at St. Germans in the sampling of 80 tons of crop ores.

ROBT. KNAPP.

PROGRESSIVE MINES.

SIR.—I am an old speculator in mines, and during my long experience as such I have invariably found that when the mining market begins to show signs of dulness a host of timid people send orders to their agents to sell their shares, and thus make the market considerably worse than it would otherwise have been. My experience has also convinced me that at such times, when timid people are forcing shares on the market, the speculator should invest every shilling he can spare. At present I am of opinion that more money can be made in PROGRESSIVE than in DIVIDEND MINES, as the prices of the best of the former are at a ridiculously low figure. I will mention a few in which I have invested, and would advise others to do so also, as the probability of an enormous advance in price is very great.

I will commence with WHEAL UNITY, the shares in which mine are selling at about 20s. each—a strange price for a mine holding out such brilliant prospects. There are several good points expected to come off in this mine, either of them, if favourable, would cause the shares to advance considerably in price. The principal point, however, is the cutting the lode on the other side of the cross-course in the 75 fm. level, and which, if cut good, there is no knowing what the shares will go to. Tales of progressive mines, indeed, this is worthy the name of one; for not only are the returns of copper ore increasing in quantity, but the quality of the ore is so improved that but few mines receive a higher price for their ore than Wheal Unity does, the last lot having been sold for about 8/- a ton, and the ore throughout the last quarter averaged about 7/- a ton, notwithstanding the low state of the standard. The last call made was 2s. 6d. per share; but if the mine continue to improve, as it has of late, I should imagine that calls will soon cease. The next mine I will notice is GREAT RETALLACK. This is a blonde mine, and is not making calls, at least it has not made calls for some time past, as the blonde (an ore of zinc) they have been raising has realised more than the cost of working the mine. As zinc ore is now at such a very low price they have ceased raising it; but the moment the ore improves in price they will raise their usual quantity. The great “point” to come off in this mine is the expectation of cutting a lead lode, and which there is every probability of their doing, and that, too, very quickly, as they are already taking stones of lead ore from the shaft, and which, I understand, appears to be rich in silver. Should this lode be cut rich, there is but little doubt that the shares will go to a high price; and, as at present they can be obtained at about a guinea each, this is the time to buy. The next mine I will notice is WEST WHEAL TREVELAN. It is difficult to say what the present price is, as the mine in the market is almost neglected. I think, however, shares may be met with at about 2/- each. They have been high as 10/- or 12/-, if not higher. The mine is but 58 fms. deep, and should the lode improve either in the 48 or 58, which there is a good probability of, the shares may go up to their old price. At all events, I consider it a first-rate speculation at the present low price of the shares. As I shall be taking up too much space in your Journal, I will not now enter into particulars of other progressive mines, but will just state that I believe NORTH DOWNS, PENDREX, and SOUTH HEARSDROOF will worth purchasing at the present price. I would say to speculators, lay out 20/- or 30/- in each of the mines I have mentioned, but particularly in the first three; and if the “points” should by chance come off unfavourably, you will probably lose 5/- in each mine; and if the “points” come off favourably you may gain hundreds. The question is, is it worth the risk? I believe it is; and I risk accordingly, and hitherto have had no cause to regret it. Let speculators recall this letter to their memory in six months time.—Aug. 14. AN OLD SPECULATOR IN MINES.

THE SLATE TRADE OF MERIONETHSHIRE.—The estimate recently made by a statistician acknowledged reputation—Mr. Robert Hunt, F.R.S.—that the average profit derived from working the slate quarries of Wales is equal to upwards of 50 per cent., and that some of the large quarries return even cent. per cent., has caused considerable attention to be directed to the slate trade by the public generally, and several influential companies have been formed for conducting quarrying operations. Amongst the recently-constituted quarry companies may be mentioned the Slate Mountain Company, which has been registered upon the limited liability principle, with a capital of 30,000/-, in 5/- shares. The property which the company proposes to work extends under about 100 acres at Llanfrothen, in Merionethshire, and it is estimated that a profit of about 48 per cent. per annum may be realised, with a working capital of 10,000/- Table B has been adopted in its integrity. Mr. W. Jones, of the Bwlch-y-Gross and Bryn Maur Quarries, at Llanberis, explains, in reporting upon the advantages which the quarry possesses, that the slates split well, and have a metal of long duration. The slates can be worked without machinery, and on the southern by daylight and not by candles, as is usual and necessary to work the Festiniog quarries generally. Capt. Siames Evans and Mr. W. Owen have also inspected and reported favourably upon the prospects of the enterprise.

TRUTH’S ECHOES; OR SAYINGS AND DOINGS IN MINING.

Although the Mining Share Market has not been very active during the week, except for the purposes of the account-day (on Thursday), when all shares dealt in during the previous fortnight are supposed to be settled, still there are evidently symptoms of an improvement, if the enquiries which have been made may be valued.

SOUTH FRANCES and WEST SETON shares have been in request, whilst EAST BASSET, STRAT PARK, and COOK’S KITCHEN shares have declined.—CONDURROW, SOUTH CONDURROW, and GREAT SOUTH TOLGUS shares have found buyers.—EAST GREENVILLE shares have been done at much lower rates, and show a reduced tendency, while GREAT RETALLACK shares have been freely dealt in at improved rates.—OLD TOLGUS shares are fair request, and improved.—EAST CADALON shares continue firm, notwithstanding the reported change in the 60: in fact, no material decline can possibly take place while so many shares are required for special and honourable purposes.—MARKE VALLEY shares have improved, and a large number changed hands during the week at higher rates.—WEST ROSE DOWN shares have been and continue in good demand, and prices consequently advanced.—WEST CADALON shares show a declining tendency; the transactions effected few and lower.—LUDCOTT shares are enquired after at present rates.—HERODSFOOT, MARY ANN, and THRELAWNY shares are offered at lower prices, the latter very freely.—SOTHREE CONSOLS shares have receded, and offered at lower prices.

NORTH ROBERT and LADY BERTHA shares are a little firmer, and find buyers at market prices.—EAST RUSSELL shares have been rather scarce at late quotations.—GREAT TREVEDEDOE shares have been in request, arising from a reported discovery.—NORTH DOWNS shares have been rather largely dealt in at market rates.—UNITY ROSEWARNE UNITED, and NEW THRELAWNY shares have found buyers at minimum rates.

At LADY BERTHA the lode in the 55, which is the deepest level, has been cut through, and although looking very promising is of but little value for copper. There is no material change in any other place, but in the 30 east there are appearances which suggest well for improvement.

At GREAT WHEAL MARTHA they are progressing with the shaft, which is now down more than 6 fathoms below the 40, and in easier ground. The 20 is improved, being worth full 8 tons per fathom of coppery muriel. All the other places are looking remarkably well, and returning the same quantities of ore as represented last week. The tribute department is looking very well indeed, men making wages, and highly profitable returns to the company. The crusher will go to work next week, when greater facilities and economy will be secured.

At CUDDRA the lode in the 60 east is reported to have improved, and holding out a probability of becoming larger in going down, with a leader of saving work. The rise is also presenting more favourable appearances.—NORTH WHEAL ROBERT continues to look well; the tin lode discovered recently not only maintains its value, but improving on being explored. There are other points coming of which are likely to very much improve the value and importance of this adventure.

WHEAL WHEY CONSOLS sold last week upwards of 670/- worth of lead ore, and a rumour prevailed that some improvements had taken place, but it has not been confirmed by subsequent advices, although it is greatly desired and expected, and may be fairly so from the appearance and productiveness of the deeper levels.—At CUDDRA they are opening out the ore ground in a very satisfactory manner, and the lode in the 60, which is extraordinarily large, is likely to become highly productive, and is still improving as they progress; they have a very excellent leader of tin, and turning out upon trial more expected, whilst the remaining part of the lode, upwards of 6 ft., is fair stamp work.

At PENHAL MOOR the lodes are still producing some good work, and the prospects are very encouraging. They have sold a small parcel of tin, realising 105/-, and have 2 tons on the floors, and will raise another ton this month. Should they make the long-expended discovery the mine will be in a very satisfactory position by the end of the month.

WHEAL ANNE (St. Austell).—A general meeting of shareholders is called for Tuesday, when it is proposed to put the stamps and other machinery into full operation, which will afford the proprietary an opportunity of witnessing the commencement of plant laid out with creditable economy and arrangement. There is a good pile of excellent work ready for stamping, and daily additions made. Great facility is afforded by the completion of the tramway from the level to the floors, which will give a constant supply to the stamps from Alien’s lode alone, and should it hold down to the deep adit as at present, of which there is no doubt, a profitable mine is then secured.

At CORNISH the operations are going on most satisfactorily, and the prospects generally very cheering. A good “pare” have taken the cross-cut south at 55s. per fathom, 20 fathoms stent, at which point the south lode is expected to be met with; the driving of which level will it is considered open some good ground, as rich branches are known to be in that direction.

WHEAL MOYLE.—It is rumoured that Capt. Pops has recently inspected this mine on behalf of some shareholders, and that the report does not fully bear out the value placed upon the lode, which has been represented as valuable. Whether the lode be worth 10/- per fathom, stated to be Capt. Pops’ valuation for tin, or per fathom, it would be advisable to wait the result of sales, which is the most correct mode of ascertaining the value of a mine. Opinions may be valued, and the most perfect confidence be placed in gratuitous or paid ones, but the produce of a mine and the price obtained for the mineral is the surest and most direct guide for one’s safety. A call of 4s. per share was made on Tuesday last.

At EAST GREENVILLE the lode in the engine-shaft continues to maintain its value and promising appearance, being estimated worth from 12/- to 15/- per fathom for tin, and 3 tons of copper ore per fathom. The 25 east and west is not looking so well at present, nor is the 35 west, which changes are considered of a temporary character when the general appearance of the lode is taken into account.—GREAT RETALLACK is represented to hold out much promise for lead in deeper sinking, that mineral being found more diffused throughout the lode. The blende in the levels where the operations are being carried on continues abundant, from whence larger quantities could be returned if the prices obtained were remunerative.—At GREAT TREVEDEDOE an important discovery is reported in a caunter lode, where in sinking a shaft a few fathoms from surface a valuable tin lode has been met with. As the discovery was unexpected, and but little opened upon as yet, it would be premature to place that value upon it, which some have until fairly seen.—CARN CARMORNE is represented as a mine that will ultimately become of great importance and permanency. The clearing up of an old mine is a work of labour and time, and whilst this has been done the nature and general character of the lodes are found to be of the most encouraging description. The operations which are being carried on for laying open a presumed valuable undertaking are energetic and meritorious; and when the several points to which the proprietors are directing their strength and measures are completed, there is very little apprehension as to the value of the result.

At OLD TOLGUS the lode in the 52 west is again improved, a temporary falling off in value has been succeeded by more encouraging appearances, which improve as they progress. Other levels are represented as holding out more encouragement than for some time past.—At BREA CONSOLS they are progressing satisfactorily, improving in prospect and returns each successive month. On the 13th inst. was sold 4 tons 9 cwt. 1 qr. 23 lbs. of black tin, realising 255/-, 15s. 4d. Exclusive of the generally improved position of the mine, for some time past they have been sinking a winze on the Red lode, where they have a deposit of tin, which is increasing in size and value the deeper they advance, having opened 7 feet without any sign of becoming less. This discovery is deemed of great importance, and will, no doubt, enhance considerably the value of the property.—At WHEAL PROSPER (Brente) meeting, on July 30, a call of 2/-, 3s. 1d. per share was made to clear off every liability to the end of June, which will make 9/- per share paid, and the shares are now reduced to 9/- by the relinquishment of 30. The affairs of the company are in an excellent position, and the prospects good. There is ample machinery of the best description erected, and in good working order, and the mine can now meet the expenditure. The engine-shaft is sunk 8 fathoms below the 20 on the course of the lode, which is improving every foot sunk. Time only is now required to open ground in the 30, in order to take away the backs over the same, and bring the mine into a profitable state. The ground is easy to develop, and water charges light, which renders it inexpensive for working, and may be considered, at quoted prices, the cheapest shares in the market.

JAMES LANE.

as 17/- per ton; but 15/- per ton is a common and, perhaps, an average price for the produce of these veins. It is proposed, as the ground is very favourable for adit level mining, and fairly supplied with surface water for driving machinery, to run adits into the hills, and cross-cutting the lodes. The lodes are very rich in the adjoining mine of Silver Bank, close to the boundary, and we have no doubt of finding an abundance of ore by cross-cutting these rich lodes in our ground. At any rate, if we discover ore such as is in the ground of the lodes further eastward it will return half profit, which will render the company 50 per cent. upon the outlay; but this is a very insignificant interest for the money, when compared with the profits of the other great Cardiganshire mines.

PROSPER UNITED.—The water is now drained to the 20, and as soon as the shafts are cut down to that depth they will fix the shaft and go on to the 40.

GREAT CRINNIS.—Through our valves of the engine wanting repair, the engine has been idle, and the water has been in a day or two; it is now, however, out again, and the men at work in their respective places. The lode in the 100 west is being carried for 7 feet wide, and is composed of very congenial quartz, muriel, and rich yellow copper ore; in fact, giving every indication of being near a large deposit of ore. The strength of this lode and the great riches it produced above are causing it to be watched with great interest by those who are acquainted with the lode and district.

TREWORLIS MINE.—Having seen an advertisement from Mr. T. H. Edwards, of Helston, for the sale of 100 shares in this mine, by public auction, on the 21st inst., I beg to submit a remark thereon. First, upon the grounds that through the intended auction some publicity will be given through the Journal of the state of the mine, hitherto so little known, except from the adventurers’ meetings, which are held four-monthly. The shareholders at a distance will be glad, no doubt, to receive any information bearing on the real merits of the property. Several agents have inspected the mine, and others are expected before the sale. On Saturday, Prof. Warington Smyth and Capt. Simmons inspected the mine, who expressed their great surprise at the discoveries made, both in the tin and copper ores. No similar discoveries have ever been made in the parish. Hitherto the mines in Wendron have been worked in the granite rock, but this mine is situated entirely in killas, near the junction with very strong and large lodes. About 100 tons of good copper ore have been already raised from the first level, with quantities still being raised. The bottom level, which is 50 fm. east of the best, with ground in the level above, is also producing rich copper ore, lode 3½ feet wide; and in a winze sinking towards this bottom level the lode is 3 ft. wide, worth 30/- per fathom for tin; sinking at 50s.

MINING IN CARMARTHENSHIRE.—A promising mine, within 100 yards of the Llandilo station of the Llanelli and Llandilo Dock and Railway Company, is about to be worked by a cost-book company, with power to register upon the limited principle, with a capital of 50,000/-, in 10s. shares—the NEW LLANDILIO LEAD AND ZINC MINING COMPANY—and as the sett is extensive, and the royalty only 1-18th, considerable profits are anticipated. Mr. John Arthur Phillips (Phillips and Darlington) has carefully inspected the property, and his report is of a very encouraging character—there being a good prospect of blends of good quality and in ample quantities being found shallow, and lead on in depth. He fully appreciates the advantages offered by the proximity of the railway, and refers to the facts that coal can be procured at about 10/- per ton, and that a sufficient supply of water for all dressing purposes is obtainable. Capt. Joseph Evans, Arthur Waters, John Kernick, and S. M. Ridge, have also reported upon the mine, and their reports are highly satisfactory.

ROSEWARNE UNITED.—On the whole, this mine is looking better, and should the present appearance continue they will do well again.

SOUTH WHEAL MARGARET.—This company has been formed for the purpose of working a mine on the Tregender estate, in the parish of Ludgvan, Cornwall. The sett is extensive, and contains several promising lodes. Operations have been commenced on some of these, and their appearance is very encouraging at the depth to which they have been seen. This mine is

Santa Rosalia Mine: In the cross-cut driving south towards the main lode $6\frac{1}{2}$ varas have been driven, by six men, at $7\frac{1}{2}$ per var. The ground here has been a little harder than usual. The old adit level has been cleared and secured a further distance of $17\frac{1}{2}$ varas, by an Englishman and two natives, but no whole ground visible yet, although we are given to suppose that the end of the old workings is not far off. The ore-salts and dressed in the month of June amounted to $55\frac{1}{2}$ tons, containing, per assay, 12,320 ozs. of silver, or an average of 221 ozs. per ton.

—July 6: At the reduction-works 108 tons of ore were amalgamated in the barrels, and produced 14 bars of silver, worth about \$11,000. Since the end of June five more bars had been produced, making altogether nineteen bars, weighing 1,584 marks, worth upwards of \$15,500, which would be sent to the Mint about July 15. The steam-engine is working well. The mine of San Pantaleon is completely drained of water, and Corumba shaft is being sunk, and the lode in it looking well. All the stopes are yielding fair quantities of ore: 53 bags ($3\frac{1}{2}$ tons) are ready to dispatch to the coast, and about 25 tons to pack in store. Directly the severe rains abate mules will be started with all this ore.—N.B. The above-mentioned ore is in addition to 332 bags (about 22 tons), which have arrived at Southampton by the packet.

WEST CANADA.—Capt. Plummer, July 22: Huron Lake Copper Mine: Since we last wrote we have continued the sinking of the new shaft, and have made pretty fair progress. The lode is wide, and yields from 3 to 4 tons per fm. The lode in this direction is, to my view, undergoing a change; it does not possess the same features, and is not of the same composition as the lode is further east on the same location. It contains a great deal more iron and muriatic acid. We are, as you are aware, approaching the limestone, and, doubtless, this is changing the character of the lode, but whether it will destroy its (the lode's) productiveness it is impossible to determine. The lode in the level east continues to be very productive, and so is the lode to the west of Palmer's shaft, coming towards the last-named point. The stopes to the east and west of Palmer's are yielding much the same as usual (about 5 tons per fathom). The lode in the level going east of Palmer's (Fire lode) is looking favourable, and yielding $2\frac{1}{2}$ to 3 tons per fm. We are making good progress in sinking Bray's shaft, and the lode has somewhat improved. The stope to the west of this shaft yields 3 tons per fathom, and the lode in the stope to the west of Jennings' shaft $2\frac{1}{2}$ tons per fm.—Wellington Mine: No further discussion has been made in the crossing south of Crase's shaft; the ground is rather tight for driving. The stope east of Hooper's shaft yields 3 tons per fathom. The stope to the west and east of Knight's (Fire) lode are yielding $2\frac{1}{2}$ tons per fm. We have just cut through the lode where we were cross-cutting to the west of Collings' shaft. We find the lode to be 6 to 8 feet wide, composed of quartz, strongly intermixed with copper ore. We call it a very promising lode, but as we have only driven straight across it we cannot yet say its yield per fathom—probably from 2 to 3 tons. The tribute pitch at McDonald's shaft (old lode) continues much the same, but the other pitch we set a fortnight since has been given up, on account of its poorness. Our dressing operations are going on favourably, and the machinery is working well.

FORTUNE.—Aug. 3: Canada Incosa—West of Taylor's Engine-shaft: The 7th level, west of Gomez' winze, is worth $1\frac{1}{2}$ ton per fm.; lode leady throughout. The 6th level, west of O'Shea's shaft, is worth 1 ton per fm., the lode very productive in the bottom of the end. The ground in the 5th level, west of Fernandez' winze, is very hard for driving. The 5th level, east of Henty's shaft, will be holed to the one last named in a few days. The 4th level, west of Henty's winze, is worth $1\frac{1}{2}$ ton per fm.; this end is opening valuable tribute ground. The lode in the 3d level, west of Judd's shaft, is small and unproductive.—East of Taylor's Engine-shaft: The lode in the 4th level, east of Lowndes' shaft, is open, with good stones of lead in the back of the end; the influx of water continues with very little diminution, keeping two drawing-lifts at work. The 4th level, west of Lowndes' shaft (now Donaghe's winze), is worth $1\frac{1}{2}$ ton per fm.; this end is holed to Donaghe's winze, west of which it is being driven in soft ground, and a good lode. The 3d level, east of Carro's shaft, is worth $2\frac{1}{2}$ tons per fm.; this lode, consisting of barytes and lead, is opening splendid tribute ground. The lode in the 2d level, east of Bartolome's winze, continues small and poor. The water being very quick in Canton's winze, below the 3d level, it will remain suspended till the end of the 4th level gets under it.—Los Salidos Mine: The 5th level, east of Antonio's winze, is worth 2 tons per fm.; lode very wide, with lead disseminated throughout. The men are making but little progress in cutting through the elvan course in the 5th level, west of the engine-shaft (now Fernandez' winze). The 4th level, west of Salvador's winze, is worth 4 tons per fm.; we hope this end, being now quite free from the influence of the elvan, will open valuable ground. The 4th level, east of Cologan's shaft, is worth 2 tons per fm.; this level is opening good tribute ground. The 3d level, east of San Pablo's shaft (now Munro's winze), is worth $1\frac{1}{2}$ ton per fm.; this level is holed to Munro's winze, and is well ventilated, and opening good ore ground. In the 3d level, west of Buenos Amigos shaft, there are good stones of lead, and we expect an improvement shortly. The 2d level, east of San Miguel shaft, is worth $\frac{1}{2}$ ton per fm., at present the lode is small and irregular. The lode in the 1st level, east of San Miguel shaft, is split into two small diverging branches. The men are getting on well with the clearing and securing of the 2d level, west of Bueno Amigos shaft; for the whole length, 50 fms., cleared west from Bueno Amigos there are unmistakable evidences of the old people having had a splendid lode, and also of their having made extraordinary efforts to extract it too.—Shafts and Winzes: Morris's engine-shaft is worth $1\frac{1}{2}$ ton per fm. We are awaiting the pitwork from Seville; until it arrives there can be little or nothing done in sinking. San Pablo's shaft is worth 1 ton per fm.; the ground is hard for sinking, and the men have done bad labour; there are 4 feet more to complete the shaft. The work in San Gabriel shaft has been retarded by the contractors having thrown up their bargain; it is now re-set, and will go on with regularity. Fernandez' winze is holed to the 5th level, which is now well ventilated. Munro's winze is worth $1\frac{1}{2}$ ton per fm.; this winze is holed to the 3d level; the lode has greatly improved of late. Oialia's winze is worth $1\frac{1}{2}$ ton per fm.; the lode will most likely go down with little variation.—General Remarks: The tribute pitches in both mines are looking moderately well, and we estimate the raisings for this month, August (five weeks), at 320 tons.

LINARES.—Pozo Ancho Mine—West of Engine-shaft—South Lode: Aug. 2: The 95, west of engine-shaft, is worth 1 ton per fathom; this level is holed to Segno's winze, and being now ventilated will be driven under the one ground in the 85 rapidly. There are two small branches continuing in the 85, west of Seville winze. The 61, east of Warne's engine-shaft, is worth 1 ton per fm.; the lode is chiefly composed of quartz and lead ore. The 61, west of ditto, is worth 1 ton per fm.; the lode open and letting out a good quantity of water. The lode in the 51, west of Tobarrena's winze, is small and unproductive. The 41, west of Crosby's shaft, is worth $\frac{1}{2}$ ton per fathom; lode containing good stones of lead.—East of Engine-shaft: The 95, east of engine-shaft, is worth $1\frac{1}{2}$ ton per fm.; the lode is large and powerful, and of a very promising appearance. The 85, east of Ramiro's winze, is worth $\frac{1}{2}$ ton per fathom; the lode in this end is not opening so well as we expected it would. The 75, east of Garibaldi's winze, is worth 3 tons per fm.; the same level, west of Taylor's cross-cut, is also worth 3 tons per fathom. These ends are communicated, making the level good continuously to Taylor's cross-cut; the ground opened between Thorne's shaft and this point has been uniformly productive. The 75, east of Taylor's cross-cut, is worth 3 tons per fm. This is what you will have observed, is a continuation of the last-named level eastward, and is also opening splendid ground. Not having discovered anything of value in the cross-cut south in the 85 it is suspended for the present.—North Lode: The 75, east of Ordóñez' winze, is worth 2 tons per fm.; this end is opening valuable tribute ground. The 65, east of Damaso's winze, is worth 1 ton per fm.; the lode has improved of late, and is looking very promising. The 65, west of Gil's winze, driven towards the one last named, is suspended, as the ground can be more conveniently spent from the other direction.—Shafts and Winzes: San Francisco shaft is worth $1\frac{1}{2}$ ton per fm.; the lode continues very compact and regular at this shaft. Serón's winze has reached the required depth for the 65. Davíe's winze is communicated to the 75. Seguro's winze is worth 1 ton per fm.; this winze is holed to the 95. La Suerla winze is worth 1 ton per fathom; this winze is difficult to sink, the lode having taken a very rapid southerly underlie. San Evaristo's winze is worth 1 ton per fm.; the lode is very large and leady throughout. La Calle winze (caunter lode) is worth 1 ton per fm.; the lode is small, regular, and promising continuance.—General Remarks: The masons are getting on very well indeed with the new engine-house; we calculate on having it up and covered in before the wet season comes on. The steam whin-engine is completed; we are waiting a coupling from Cordova to commence crushing. The tribute pitches, on the whole, are looking much as usual.

LUSITANIAN.—Aug. 5: Palhal Mine: The ground in the 40 cross-cut, west of Oak shaft, is without alteration to notice. In the 30 cross-cut, south of Oak shaft, we have cut the house lode, where it is 8 in. wide, composed of quartz, mica-schist, and muriatic acid, from which is issuing a stream of water to supply a 4-inch box.—Basto's Lode: The lode in the 60, west of Taylor's diagonal engine-shaft, has not yet been taken down. The lode in the 60, east of this shaft, is $3\frac{1}{2}$ ft. wide, worth $1\frac{1}{2}$ ton per fm. The lode in the 50 west is 2 ft. wide, worth $1\frac{1}{2}$ ton per fm. The lode in the 50 east is $2\frac{1}{2}$ ft. wide, composed of quartz and stones of ore. The lode in the 38 west is 4 ft. wide, producing quartz and a branch of ore, worth 1 ton per fm.—Levels East and West of River Shaft: The lode in the 50 west is 2 ft. wide, worth $1\frac{1}{2}$ ton per fm. The lode in the 38 east is $1\frac{1}{2}$ ft. wide, composed of quartz and good stones of ore. The lode in the 38 east is $1\frac{1}{2}$ ft. wide, and unproductive. The lode in the 28 east is 4 ft. wide, composed of quartz, spotted with lead. The lode in the 18 east is $4\frac{1}{2}$ ft. wide, producing quartz, a small branch of ore, and stones of lead. The lode in the adit level, east of Pinto's shaft, is 9 in. wide, composed of mica-schist, impregnated with lead. The lode in the adit, west of Perez' whin-shaft, is 2 ft. wide, worth 1 ton per fm. The lode in Jackson's winze, below the 38, is worth $1\frac{1}{2}$ ton per fathom; this winze is now holed through to the 40. The lode in the stopes No. 1, in the back of the 50, west of Ernesto's winze, is worth $2\frac{1}{2}$ tons per fm. The lode in the stopes No. 2, in the back of the 38, west of mark west of Clondino's winze, is worth 1 ton per fm. The lode in the stopes No. 3, in the back of the 50, east of Taylor's shaft, is worth 1 ton per fm. The lode in the stopes No. 4, in the bottom of the 28, west of Clondino's winze, is worth $\frac{1}{2}$ ton per fm. The lode in the stopes No. 5, in the back of the 38, east of Clondino's winze, is worth $1\frac{1}{2}$ ton per fathom. The lode in the stopes No. 7, in the back of the 50, west of Taylor's shaft, is worth $1\frac{1}{2}$ ton per fm.; this winze is holed to the 95. La Suerla winze is worth 1 ton per fathom; this winze is difficult to sink, the lode having taken a very rapid southerly underlie. San Evaristo's winze is worth 1 ton per fm.; the lode is very large and leady throughout. La Calle winze (caunter lode) is worth 1 ton per fm.; the lode is small, regular, and promising continuance.—General Remarks: The masons are getting on very well indeed with the new engine-house; we calculate on having it up and covered in before the wet season comes on. The steam whin-engine is completed; we are waiting a coupling from Cordova to commence crushing. The tribute pitches, on the whole, are looking much as usual.

WASLEY.—Aug. 5: Palhal Mine: The ground in the 40 cross-cut, west of Oak shaft, is without alteration to notice. In the 30 cross-cut, south of Oak shaft, we have cut the house lode, where it is 8 in. wide, composed of quartz, mica-schist, and muriatic acid, from which is issuing a stream of water to supply a 4-inch box.—Basto's Lode: The lode in the 60, west of Taylor's diagonal engine-shaft, has not yet been taken down. The lode in the 60, east of this shaft, is $3\frac{1}{2}$ ft. wide, worth $1\frac{1}{2}$ ton per fm. The lode in the 50 west is 2 ft. wide, worth $1\frac{1}{2}$ ton per fm. The lode in the 50 east is $2\frac{1}{2}$ ft. wide, composed of quartz and stones of ore. The lode in the 38 west is 4 ft. wide, producing quartz and a branch of ore, worth 1 ton per fm.—Levels East and West of River Shaft: The lode in the 50 west is 2 ft. wide, worth $1\frac{1}{2}$ ton per fm. The lode in the 38 east is $1\frac{1}{2}$ ft. wide, composed of quartz and good stones of ore. The lode in the 38 east is $1\frac{1}{2}$ ft. wide, composed of quartz and stones of lead. The lode in the 28 east is 4 ft. wide, composed of quartz, iron, and muriatic acid. The lode in the 10, west of Henriques' shaft, is $6\frac{1}{2}$ ft. wide, producing 5 cwt. of lead per fm.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending Aug. 11 were 12,503. 8s. 11d.

HOLLOWAY'S OINTMENT AND PILLS—DISEASE PREVENTED OR CURED.—Sorbiculic humours so often appear during childhood, that it behoves every mother and nurse to know how to eradicate them without danger or delay. In whatever way these constitutional taints display themselves, they may be surely met and successfully treated by using Holloway's noble remedies, according to the instructions folded round each packet. Their employment is attended by no risk. By their means this formidable disease may be arrested and extirpated in its early progress, before it has reached the vital organs. When once the scrofulous poison is overcome, the soundest health may be attained and preserved by occasionally using the same antidotes, and paying proper attention to diet and ventilation.

ANCIENT GEOLOGY—No. VI.

THE FORMATION OF THE METALS.—Although the vegetable world, when kept underground, becomes blanched and colourless, the whole metallic kingdom is fraught with the brightest hues and most beautiful colours.

When looking at the beautiful objects found in the hollows of metallic lodes, so resplendent with chromatic rays, and comparing them with the metallic lustre found in the plumage of birds, the shading of flowers, and other brilliant objects of the organic kingdom, I have been led to ask, do not the organic and crystalline kingdom derive their hues in common from a parent origin? and I have asked philosophers if the masses of colour found in the metals might not have been eliminated in thin coating from light and gas, such as the painting of the leaf of the rose or the feathers of the humming-bird? but I have been always answered—No. Colour is the mere effect of the arrangement of the particles on the surface of things, and there is no substance in it. I have further endeavoured to substantiate the fact that colour must be a substance, by arguing that if we took the first objects of colour since the days of creation, and massed them together, they would amount to tons in weight, no matter how light and fragile the specimens might be that we used as an example,—for instance, in the case of the egg of the peacock, these metallic hues have been continued to be drawn from light and air from generation to generation since the species began to exist, and will continue until it be exhausted, probably for thousands of years to come.

Can we imagine that there is not an amount of substance in all those millions of laminae of colour? the old answer was—No. But time unravels these wonderful and difficult problems; and we now have the great German chemists Bunsen and Kirchoff, represented in our English school by Professor Roscoe, demonstrating that metal exist in the solar spectrum; that as potash imparts a violet colour to flame, lithium crimson, soda yellow, and barium green, when they are volatilised, so do the chromatic rays of the sun when analysed yield metals. For example, the yellow ray of the sun contains soda, and that the metal sodium exists in body or substance in this ray of the sun. We, therefore, have no further difficulty in imagining how the primrose and all the host of flowers of that hue are painted, because we have it demonstrated that in the rays of the sun the basis of that colour exists in the shape of sodium; and so with other colours; they are not only substances, or substantial things, but really metallic substances. All who have worked underground, and have had to try the presence of copper, which often exists in the shape of a rich black oxide, very profitable to the tributary, will be aware how that rude chemist moistens the sooty substance and applies it to the flame of his candle, and how satisfied he is, if the green flame appears, that the true metal exists in his ore, and that he is not deceived by the black oxide of iron, or other more worthless substances. Few, when engaged in this method of analysis, imagined that they long ago were taking the very same method to test the presence of the metal that the great German chemists have recently taken to test the presence of metals, not only existing in the sun's rays, but in every other part and form of created matter connected with the solar system. Nor is there any doubt as to the truth of the assay of the quantity of metal in the sun's light, since M. Bunsen was able to detect the 180,000,000th part of a grain of soda when volatilised in a room, obtaining by this delicate method the prismatic test in less than a minute, what could only be done by hours of laborious work by the humid process; and what is true with reference to the metal volatilised artificially is equally true with reference to its existence in the sun's ray in its natural state. Well, the reader may say, what has all this to do with the formation of metallic veins?

If we go into the veins of metal hundreds of fathoms below the level of the sea, and we break out a lump of ore, no matter what, whether it be tin, copper, lead, gold, silver, or iron, we find it is nothing else but a mass of faces of the most beautiful colours; in frequent instances by the light of the candles you see in the grottoes of the lodes a fairy-like arrangement of chromatic glories, only to be produced on the surface of the earth by the use of the kaleidescope. The veins or lodes of metal, from wall to wall, are made of crystallised laminated coats of beautiful colour; and, in fact, the whole of the interior of the crust of the earth, instead of darkness, is a wondrous mass of light and colour.

Professor Hunt has told us, in eloquent terms, how the sun's light, hoarded in the timber of the tree, after lying for thousands of years deep in the crust of the earth, in the form of coals, has been brought to the surface to give us back the sunlight in the shape of gas, and that the same light that lightens our streets and drawing-rooms at night was thousands of years ago carefully husbanded for us by a process of Nature as marvellous as it is benevolent. There is no doubt that the sun's light and its metals have extended to the foundations of the earth, distributing riches through the whole fabric of the globe; and although we cannot say exactly how the metals have been crystallised on the walls of the lodes any more than we can how the layers of timber have been arranged to form the tree or the films of lime on the central cylinder of the bone, yet we do not greatly stretch analogy by concluding that the vermilion of mercury, the green of copper, the yellow of sodium, the red of lithium, the violet of potassium, together with all the beautiful colours of the rainbow, have been benitified stored for us, time out of mind, in the partitions of the lowest rocks, by a process somewhat akin to that described as connected with light in coal by Professor Hunt. We must not forget that the aggregation of metal by the slow process of crystallisation has not been the produce of a day but the accumulation of ages, and that in the apparently dark laboratories of Nature there are actively at work, in the fracturing media of water, &c., the powers of electricity and different gases. Mr. Cross produced quartz, years since, by electricity acting upon water alone; but when we take into consideration the new fact that light is fraught with metal, it is not difficult to conceive that the power of collecting these elements would naturally result in wonderful arrangements of metallic riches, and even, *a priori*, we might have conceived some notion of the grandeur and magnificence that would be assumed by the mineral kingdom, but no person judging of such designs by our own inefficient strength and evanescent day, could imagine that such prodigality of creative power could be accomplished; no description can give any idea of its splendours; these glorious works must be viewed and studied attentively underground before any correct notion can be formed of their extent and magnificence. With such study a feeling as to the possibility, and even as to the mode of the operations of their existence, enters into the mind. The history of the earth, as displayed in the metalliferous and fossil kingdom, reared up in the different stages of stratification of its crust, affords a grander view of creation, and one higher to contemplate, than anything on the surface of the planet, except the history of man himself.

IMPROVEMENTS IN SEWING MACHINES.—Mr. Walter Hart, of Norwich, has just specified (per Mr. Campion, the patent agent) his patent for improvements in sewing machines. The mechanism for working the needle is so arranged that it is transverse to the mechanism for actuating the shuttle (or its equivalent), whereby the shuttle-box is caused to project, as on an arm or bracket, which may be brought through the open part of such work as sleeves, boots or shoes partly made up, tubular articles, and the like; although when other work is to be done a wooden table of the bed or table of the machine, as so to form a more extended surface for the flatter work. The specification further states:—"To render my invention better understood by the practical man, I will now proceed to describe the changes I make in constructing sewing machines, taking Thomas's sewing machine, now in public use, as the example. I have a fly-wheel or balance, as in Thomas's machine, but of two-thirds less diameter, and carrying the cam for propelling the needle-shaft or lever; and this cam in my arrangements works the said needle-shaft or lever, as in Thomas's said machine, the whole arrangements for actuating the needle being the same as in that machine. But my machine also differs from Thomas's, inasmuch as the axis or spindle of my machine is produced to some length (say 9 in.) underneath the bed or table, which is in the widest part, say, 12 in., the bearings for said spindle being pendant from the underside of said table or bed. This spindle carries a cam, or double cam, of peculiar form, being in form nearly circular, save where a portion is cut away, where it is bevelled off, the object being to actuate the end of stitch-mover in the same way that the particular cam arrangements in the ordinary Thomas's machines do; a cam actsuates the pressure-lever in a similar manner. At the end of the said spindle is a vertical pulley, which can be used to drive the machine by band or strap, by trolley action, or by other power arrangement. This pulley, which is 2 in. in diameter, forms an eccentric or crank-wheel, having a pin eccentrically placed, say, $\frac{1}{2}$ in. from the centre, which forms a turning joint to the end of a connecting lever, placed at right angles, or nearly so, to the axis or spindle of the fly-wheel or balance first mentioned, the length of connecting-lever being, say, 11 in., and of suitable thickness and breadth, and the other end of this connecting-lever being secured free to move to a crank horizontally placed. This crank being a kind of bell-crack, having two arms, with a thick boss between, one arm, that to which the end of said connecting-lever is secured as aforesaid, being 2 in. in length, and of suitable breadth and thickness; and the other arm, which is much closer to the underside of the table, having between the said boss, which is, say, 1 in. in length, and of proportionate diameter, the said last-mentioned arm being, say, 4 in. in length, and of suitable breadth and thickness; the said crank or bell-crack being secured free to move by means of a bolt or axis passing through the said boss, and screwed into a bearing-piece on the underside of the table or bed. The free end of the crank last mentioned has a slot cut to receive a swivel on the end of a lever, the other end of which is in a groove or slot in the shuttle-box, being fixed on an arm or bracket, which issues from the table, being parallel to the spindle first mentioned, and transverse to the needle-shaft, pressure-lever, and stitch-mover hereinbefore alluded to. Hence upon motion being given by the handle or fly-wheel, or from the pulley-wheel, the needle-work, such as sleeves, tubular articles, and the like may be made upon the said bracket without difficulty. The arrangement of the transverse arm and its adjuncts are claimed."

Mining Correspondence.

BRITISH MINES.

ABERDOVEY.—A. Eds: The men in the engine-shaft have been delayed for two or three days, in consequence of some heavy floods, but there is every appearance of a favourable change in the ground in the cross-cut. The men in the stopes in the back of the 32, north of winze, on main lode, have been putting in a stall, so there is no change to notice. The stopes south of winze is improved, and producing $1\frac{1}{2}$ tons

are extended to the north and in depth. Hence the mine only requires a little more spirited prosecution, with the aid of a moderate working capital, to bring it out into a regular profitable state.

—Robt. Sanders, Aug. 14: I have suspended the driving south-east on the caunter lode. Two of the men are preparing to drive north-west on the caunter at the 22; the other two men are preparing to stop a piece of ground in the bottom of the 22, south of the shaft, which I think can be taken away at a profit to the company. The 42 north is still spare for driving; present price 67. 10s. per fm. The produce of the lode is still gradually improving, and present appearances indicate that the ground will also very shortly be more easy for progress. I have this day sampled a parcel of lead ore, computed 24 tons; this, with 6½ tons sent away in the last parcel, will make the produce for May and June 20½ tons.

CELF CILCEN.—J. Williams, Aug. 14: The 73 yard level, driving east of whin-shaft, is without any alteration of importance since my last report. The lode is 3½ ft. wide, composed of spar and shale—unproductive for ore. The rise above this level is getting on satisfactorily. We have not taken down the lode this week. We expect a good result when the lode is taken down. The 60 yard level, driving east of footway shaft, is without much alteration; it continues very encouraging. The north lode in the east and west ends of the footway is about the same as last reported on; as the air is bad at this point, I have taken the men away and put them to sink the western whin-shaft, for convenience of getting water for the dressing-floors. The pulley shaft, sinking below the 60 yard level, is getting on well, the ground having changed for the better; the lode is 4 ft. wide, composed of spar, clay, and limestone, and some good stones of lead ore; it is looking very encouraging. The 60 yard level west is without any alteration.

OLERA UNITED.—Jas. Lester, Aug. 15: The lode in the 32 west is looking better than I have yet seen it; the same level east is hard, and contains a strong mixture of blende and lead ore. No alteration in the winze sinking from the 20 to the 32 fathom level since my last report.

CORNUBIA.—W. H. Gray, Aug. 14: The men have taken the cross-cut to drive in the 30 from the new shaft, at 35s. per fm., for 20 fathoms extent, the supposed point of intersection with the south lodes; but, by the direction this driving takes, it is likely that the other two courses will be crossed in the way out, as the surface workings and the bearings of the lodes coming west from the eastern mine appear to indicate. In the bargain they have, of course, to pay all charges, exclusive of drawing, &c.; but as they did badly on the last contract, and we have a strong desire to get out under the ground gone down opposite this shaft (which will the sooner be accomplished by rightly following up), I have been induced to encourage them to some extent by the prospect of getting tolerably well paid. During the late sinking the ground has continued to improve, and the men have now in the cross-cut before them a thin-bearing stratum of the most congenial character, which, so far, is certainly a guarantee of success. The fixing of permanent rods, connections, and plunger-lift, &c., in the 20, at the eastern shaft, is being gone on with as fast as prolonged hours and strict application on the part of the men can accomplish the work; hence it will not be long now before the 40 will be reached, and soon after the lodes are laid open we may expect such subsidiary returns, by virtue of water power in connection with drawing machinery as well, as will much relieve the working costs, pending the getting down with the shaft and erecting stamping machinery. Here, however, the present defective ventilation obliges us to put some men about clearing and securing Trestrell's shaft to the 20, and communicating the two points by the existing level. But this must not be considered a temporary job, or regarded as less important because undertaken earlier than anticipated, as, from its central position between the two mines, Trestrell's shaft will necessarily occupy an important place for traffic, and, therefore, must be reconstructed sooner or later. The level is completed from discharging from the new wheel, and the men are hastening out the foundations for pit; in respect to the machinery, also, no time should now be lost. The sinking out of the water, and other operations attendant thereon, being our principal objects for some time to come, and these matters having already been pretty fully detailed, I can further only add, that my confidence in the undertaking suffices, no check as we proceed, and this is shared by persons in the district, who, acting on knowledge rather than faith, have purchased shares at a considerable premium within the past fortnight.

CROOKHAVEN.—H. Thomas, Aug. 12: The western trial shaftmen have been engaged during the last week in bringing up a lobby, to take off the surface water from going down the shaft; and the timbermen are at present collarizing the shaft, which was too dangerous to work under. On Wednesday last, during the sinking, the shaft will be resumed. The rising and sinking on the hookan lode, for ventilation, is going on expeditiously, and I have every reason to think the communication will be effected this month. In the 40, driving west on the south lode, the lode is much the same as last reported, with the exception of containing more spar, which I am pleased to see. In another week I think it would be advisable to cut through the lode, in order to determine its size and character. In the engine-shaft we can only work eight hours in the twenty-four, consequently much progress cannot be made; however, in a short time we shall be able to sink 9 or 10 feet per month. The men are working well, and not an hour is lost in pushing matter forward as fast as possible.

CROULLWM.—J. Roach, Aug. 15: The south lode in adit level is 3 ft. wide, consisting of hookan, quartz, and grit-stone, spotted with blende, sulphur, and lead ore. CUDDRA.—A. Cundy, Aug. 14: I have had a sample tried of the work from the 60 end, west of Walker's shaft. The pile is about 50 sacks of best work, which we got from taking down 2 fms. of the lode, and the produce of the pile is 41 cwt. 0 qr. 14 lbs. per 100 sacks. We shall take down about 2 fathoms more at the end of the week. The above sample is a proof of the great value of the lode.

A. Cundy, Aug. 15: Tickell's Shaft: The 100 fm. level has been driven west, by six men about 4 fathoms; the lode is about 1 ft. wide, composed of quartz, prian, yellow and black copper ore, with every appearance of an improvement in a short time. In the 60 (No. 1 stope) the lode is 10 feet wide, and worth 1½ cwt. of tin per 100 sacks; stopping by four men, at 30s. per fathom. In No. 2 stope the lode is 7 feet wide, and worth 1½ cwt. of tin per 100 sacks; stopping by six men, at 30s. per fathom. In No. 3 stope the lode is 4 feet wide, and worth 2 cwt. of tin per 100 sacks; stopping by six men, at 60s. per fathom. The same level, west of Walker's shaft, is being driven by six men, at 5s. per fathom under the lode; the leader part of the lode is 2½ feet wide, and worth 15 cwt. of tin per 100 sacks. We shall take down about 2 fathoms of the lode before this day week. In the back of the same level we have six men cutting out the killas under the lode at 40s. per fathom, the leader about 2½ feet wide, and when last taken down we found it worth 15 cwt. of tin per 100 sacks; this is a very important point for us, as there is every appearance of a lasting shoot of tin. Walker's shaft we shall commence sinking on Monday next, by six men, or nine if required; we shall sink this shaft under the lode. I cannot see what is going to hinder us from having a good and lasting mine. All the machinery is working well. We are getting on very well with the dressing department, and shall be ready to dress tin in a few days.

CWM ERFIN.—Aug. 15: The lode in the 45 west is 5 feet wide, composed of a dark clay-slate, with spots of copper ore and small branches of lead ore disseminated throughout; it carries a well-defined foot-wall, and looks promising. The lode in the same level, going east of boundary, is 4 feet wide, and poor. The lode in the stopes over the back of this level, 15 fms. east of boundary, is 5 feet wide, and worth ½ ton of lead ore per fm. The lode in the 32, east of boundary, yields 1 ton of ore per fathom. The lode in the stopes over the back of the same level, 90 fms. east of cross-cut, yields 10 to 12 cts. of lead ore per fm. The lode in the stopes over the back of the same level, 35 fms. east of cross-cut, has improved, and will now yield from ½ to 1 ton of lead ore per fm. The lode in the 32, east of boundary, yields 1 ton of ore per fathom. The lode in the stopes, 30 fms. east of cross-cut, is worth 15 cwt. per fm. The lode in the stopes over the back of this level yields 12 cts. of lead ore per fm. The lode in the 20, east of cross-cut, is worth 15 cwt. of per fm., and I think we have richer ground ahead. The lode in the stopes, 100 fms. east of cross-cut, yields 1 ton per fm. The lode in the 20, east of cross-cut, is worth 15 cwt. of per fm. The lode in the stopes over the back of this level yields 90 fms. east of cross-cut, yields 1 ton of lead ore per fm. The lode in the 20, east of cross-cut, is worth 15 cwt. of per fm. The lode in the stopes, 30 fms. east of cross-cut, is worth 15 cwt. of per fm. The lode in the stopes over the back of this level yields 12 cts. of lead ore per fm. The lode in the 20, east of cross-cut, is worth 15 cwt. of per fm. The lode in the stopes over the back of this level yields 90 fms. east of cross-cut, yields 1 ton of lead ore per fm. The lode in the 20, east of cross-cut, is worth 15 cwt. of per fm. 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NORTH WHEAL ROBERT.—W. Golden, Aug. 15: We have taken down the tin lode at the 30, west of the trial shaft; the lode in the end is not so productive, but still yields good work, and likely to turn out well. The lode in the 20 end, west of Fall's cross-cut, is worth 3 tons per fm., and east 2 tons per fm. All other parts of the mine are much the same.

NORTH WHEY.—T. Kemp, Aug. 15: The new shaft is down 5 fms., below the 20, in ground favourable for sinking, but the lode in the shaft causes a great increase of water, giving above twenty barrels to draw in six hours. The lode in the present bottom of the shaft is fully 2 feet wide, composed of the same congenital matrix as before stated. The lode in the cross-cut from the 38 keeps its size and character; we have driven on its course 15 feet, and are pushing on as fast as possible, as its opening will release the water in the shaft as soon as we get a little further in; the lode is 4 feet wide, composed of strong capel, spar, white prian, iron, and very rich gossan, and this gossan is still spotted with malleable and grey copper. It is a splendid looking lode, and there is not the least doubt but that this fine gossan will lead to great deposits of copper ore as soon as we get further away from the north and south lode. The masons have nearly completed the bob-bit at the new shaft.

OKEL TOR.—W. B. Colton, Aug. 15: In the 80 east the lode is yielding 4 tons of ore to the fathom. In the pitch in back of this level the lode is looking very well. The lode in the rise in back of the 65 is looking very well, and yielding 7 tons of ore to the fathom. In the 50 east the lode is 2 ft. wide, and yielding 3 tons of ore to the fathom, with every appearance of its improving. The stopes in back of the 50 will yield about 4 tons of ore to the fathom, and in the bottom of the 50 the lode will yield about 9 tons of ore to the fathom.

PANT-Y-PYDWEW.—R. Nankivell, Aug. 15: In the 54, west of whin-shaft, we have cleared and secured the level, and have commenced to drive. The end is 17 yards from the shaft. The whole of the ground above the back of this level is worked away from the shaft to within 2 yards of the end. The lode in the end is composed of spar, carbonate of lime, and spots of lead ore, but is rather small at present. I think it will soon open out larger, as there is water issuing from the lode.

PEDDN-A-N-DREAL.—W. Tregay, T. Delbridge, Aug. 10: The engine-shaft is sinking as fast as possible, by twelve men; lode large and promising, but at present poor. In the 110 east the lode is coarse; we have about 10 fms. further to drive to reach the tin ground in bottom of the 100, to which point this end will be pushed forward as fast as possible. The 100 east is yielding occasional stones of tin. In the stopes east and west of whinze, in bottom of the 100 east, the lode is 10 ft. wide, worth 50f. per fm.; we are now getting down towards the better tin ground sunk through in the whinze. The lode in the 90 rise is 4 ft. wide, worth 25f. per fm. The 90 west, on Skinner's lode, is worth 5f. per fm.—Cobbler's: The sinking lode has been suspended until some of the men now necessarily employed about the adit &c., finish the work there.—Street and Bragg's: In the 47 east the lode is promising, and now approaching the run of tin ground gone down in bottom of the 40; we expect an improvement. The 40 east is worth 8f. per fm.

PENDEEN CONSOLS.—W. Eddy, J. Warren, Aug. 10: In the 130 north the lode is 2½ ft. wide, but poor. In the 118 north the lode is much as the last reported. The 118 south is not driven far enough to reach the run of tin gone down in bottom of the 106. The 106 south is still opening up good tin ground. In other parts of the mine we see no alteration to notice.

RHEIDOL.—Rhurragos Engine-shaft: In the 12 fm. level cross-cut, driving north, the ground is more favourable for driving than last reported; the end letting out water. In the deep adit level driving west the lode is 18 in. wide, composed of spar, sulphur and killas; the ground is easy for driving.

RIBDEN.—R. Nineus, Aug. 15: The stopes in the bottom of the 62, west of Gilbert's shaft, continue much as usual, yielding some good copper and lead ore. We are getting on as fast as we can with the dressing, and the works throughout are going on well.

ROSEWALL HILL AND RANSOM UNITED.—E. Thomas, Aug. 14: The lode in the 110, west of Troon, is now 4 ft. wide, worth about 30f. per fathom. The lode in the 100, south of Troon, is now about 10f. per fm.; here we are daily expecting an improvement. The other parts of the mine are without change.

ROSEWARNE UNITED.—E. Cartwheel, Aug. 15: In the 90 west the lode is unproductive. The rise in back of the 90, east of Jennings's shaft, is worth 3f. per fathom. In the 80, east of Jennings's shaft, the lode is 3 ft. wide, producing stones of ore. In the 80, west of footway shaft, the lode is 2½ ft. wide, producing a little ore. In the 74, at Richard's shaft, we are driving south to cut the lode. In the 58, west of Richard's shaft, the lode is 3 ft. wide, containing good stones of copper ore. In the whinze sinking below the 46, west of Richard's shaft, the lode is 3 ft. wide, producing a little ore. In the 46, east of Lane's shaft, the lode is 2 ft. wide, yielding a little ore. In the 34, east of Lane's shaft, the lode is 3 ft. wide, worth 2f. per fm. for tin. Wellington's shaft is sinking below the 22; lode 3 ft. wide, producing good stones of copper ore.

SCORRHEE CONSOLS.—J. W. Crase, T. White, Aug. 14: The ground in the engine-shaft is a little easier for sinking, and the water much less than we anticipated. The No. 2 lode in the 15, driving east of shaft, is 4 feet wide, composed of chlorite and capel, with a very promising appearance, and producing good work for tin, and will no doubt when fairly opened yield large quantities of minerals. We are making good progress with our surface work; also with the clearing of the adit. No other change since the last report.

SILVER BANK.—A. Francis, Aug. 9: I was yesterday over the surface and underground at this mine, with John Morgan. I found the veins at the surface large, and where they were left unwrought well filled with gossan, spar, lead ore, and blende, and presenting every appearance of their becoming very productive at a small or shallow depth from surface. In going through the adit driven by the late Mr. Daniel, I found that he had worked the lode at different points, and had extracted a considerable quantity of lead ore, all of which he procured at from 5f. to 6f. per ton, including the dressing of the same, all of which was done without the aid of machinery, and must have been very rich to have been raised and made marketable for the price named. The old workings, under the adit at the Blue shaft, seem to have been the richest deposit; and I am informed by good authority, when they were overpowered by water, by means of drawing it with barrels, an excellent course of lead ore was left. The driving your adit westward has entered into a good ore lode; and, as the old Roman works are considerably in advance of your forefront, there is every reason to suppose you will pass through a good course of lead ore for a great length, by extending your level in this direction. There is a cross-cut which has passed the Foxpath lode for some fathoms, and this I would recommend should be driven under the south lode at some time, when you have means on the spot for returning your ore, or rather making it marketable. I found an excellent stope over the adit level at Blue shaft, and I am convinced you will find hundreds of fathoms of ground in this place to work away at good profits to the proprietors.

SORTRIDGE CONSOLS.—J. Richards, Aug. 15: Hitchins's Engine-shaft: In the 62 west the lode is 2 feet wide, and consists of munde, peat, and quartz, with occasional stones of ore. In Collom's rise, in the back of the 50, on the north part of the lode, the rise is by the side of it, and where last taken down is worth 1 ton of ore per fathom. In the 50 east, west of Crew's cross-cut, the drivage is turned south in search of the lode, supposed to be thrown in that direction by a cross-course. In Mayne's rise, in the back of the 50, east of Crew's cross-cut, on the south part of the main lode, the lode at present is small, 1 ft. wide, and yields stones of ore only; it is, however, promising, and will again there is no doubt soon improve. In the 40 east, and east of Head's rise, on the south part of the main lode, the lode is worth 3 tons of ore, or 30f. per fathom. In the 50 east, west of Mayne's cross-cut, on No. 2 south lode, the lode is small (6 inches wide) and unproductive. In the 50 west, and west of Arthur's cross-cut, the lode is not so good, it is 18 in. wide, and yields good stones of ore. In Lawry's rise, in the back of the 30 east, on No. 2 south lode, the lode is worth 1 ton of ore per fathom. In Blanchard's stope, in bottom of the 40, that lode is worth 1 ton of ore per fathom. In Rows's stope, in the back of the 40, on No. 2 south lode, the lode is worth 2 tons of ore per fathom.

SOUTH CARADON WHEAL HOOPER.—W. C. Cook, Aug. 10: The engine-shaft is without any alteration to notice since last report. In the 62 west, and also the whinze below the 47, the lode has the appearance of increasing in size, and is spotted with copper ore. In the 47 north we have passed through several small branches a few inches apart, containing munde, and letting out water; the ground is highly mineralised.

SOUTH CARN-BREA.—T. Glanville, Aug. 10: Tuwtwork Setting: The new shaft to sink by twelve men, at 35f. per fm. The rise in back of the 68 cross-cut, by four men, at 17f. per fm. The rise in back of the 68, west of the shaft, by two men, at 3f. per fm. The whinze to sink, below the 58, east of the shaft, by four men, at 10f. per fm. The 20 fm. level cross-cut to drive north into the lode, by two men, at 6f. per fm.

SOUTH CONDURROW.—W. Richards, Aug. 12: The engine-shaft is now down to the 40 fm. level; we have commenced to drive east and west on the lode; the lode in the end west is very much improved for the last 6 ft. driving, composed of spar, flookan, and stones of rich malleable copper. I have had two samples of ore assayed; one will produce 50, and the other 10 per cent. No change in any other part of the mine.

SOUTH CRENVER.—E. Chegwin, Aug. 13: In the flat-rod shaft, sinking below the 105, the lode is 1½ ft. wide, producing stones of copper ore, and ground more favourable for sinking. No lode taken down in the 105 east for the week. Our tribute pitches are not looking so well.—South Mine: In the 51, driving east of cross-cut, on new south lode, the lode is 2 ft. wide, producing stones of tin. In the 51, west of cross-cut, on new south lode, the lode is 3 ft. wide, producing good stones of tin and spots of copper ore.

SOUTH DOLCOATH AND CARNARTHEN CONSOLS.—Wm. Roberts, Aug. 14: In the 50 cross-cut north there is no alteration to notice. In the adit east, on the canter, the lode is small and unproductive. The stope in back of the adit produces good ore.

SOUTH DARREN.—J. Boundy, Aug. 12: The engine-shaft is sunk to the depth of 9 fms. 3 feet below the 70. The lode in the present bottom is 4 feet wide, composed of copper, clay-slate, carbonate of lime, and lead ore, yielding for copper and lead ore from 14 to 16 cwt. per fm., and, judging from the strong appearance of the lode at this point, we hope for good results in the next level. The lode in the 70 end east is 6 feet wide, yielding 12 cwt. of lead ore per fm. The lode in the 60 east is 2 feet wide, worth from 10 to 12 cwt. of lead ore per fm. All the other places continue much the same as when last reported. All the machinery is working well.

SOUTH WHEAL BETSY.—Wm. Hancock, Aug. 13: During the past month the cross-cut, south of Ley's shaft, has been driven 2 fms. 1 ft. 6 in.; ground therein composed of capel and flats of spar, and the branch as last reported; set to six men, at 12f. per fm., stoned 2 fms.

The north cross-cut has been driven 1 fm. 5 ft. 6 in.; ground therein composed of capel, and the branch as last reported; set to six men, at 14f. per fm.

SOUTH DAY UNITED.—E. Ralph, J. Cock, C. Oates, Aug. 10: At Blisso Pool engine-shaft, sinking below the 155, the lode is 1 ft. wide, unproductive. In the 155 end, west of shaft, the lode is 3 ft. wide, and worth 6f. per fm., with a very kindly appearance.

Billings's shaft is sunk to the 164, and the lode is 5 ft. wide, and worth 70f. per fathom. We intend to sink about 4 ft. more for fork; when that is done we shall at once commence to drive east and west on a good course of tin. In the 154 end, east of shaft, the lode is 3 ft. wide, and worth 15f. per fm. In the 154 end west the lode is 2 ft. wide, and producing saving work for tin. In the whinze sinking below the 154, west of shaft, the lode is 5 ft. wide, and worth 20f. per fm. The stopes in the back of the 154, east of shaft, are worth 50f. per fm. In Badwin's whinze, the bottom of the 154, west of shaft, the lode is 3 ft. wide, and worth 10f. per fm. The whinze sinking below the 154, east of shaft, the lode is 2 ft. wide, and worth 10f. per fm. The two stopes in the back of the 154, west of shaft, are worth 50f. per fm. There is nothing new in Trussall's south shaft, the lode is 3 ft. wide, and worth 10f. per fm. There are five pairs of men engaged at Opie's engine-shaft, and intend to push it on with all possible dispatch. The greatest part of the stones for the engine-houses are brought from Wheal Maid to this part of the mine. The foundations of the engine-houses are not yet cleared out, as we have to sink deeper than we first anticipated. The machinery throughout these mines is working very well.

ST. IVES WHEAL ALLEN.—H. Taylor, Aug. 15: Bodicick's Lode: The 20, east of Louis's shaft, is about 6 in. wide, and worth 3f. per fathom.—Giesler's Lode: The lode in the 50, west of Giesler's shaft, is about 2 feet wide, and worth 5f. per fathom. The lode in the stopes in back of the 50 west is 2 feet wide, and worth 8f. per fathom. The lode in the 50, east of Giesler's, stopping in the bottom, is worth at present 10f. per fm. No change in any other point of operation to notice since my last.

TAMAR SILVER-LEAD.—T. Foot, Aug. 13: Having communicated the winze in the 226 to the 237, we have removed the shaftmen to make preparations for sinking the engine-shaft under the 237 south; the lode in the end at present is divided; the branch on the western wall is 9 in. wide, and will produce 5 cwt. of lead per fm., and from appearances we anticipate in about 6 ft. driving the lode will become united, when it may be fully expected to be more productive. There has been no lode taken down in the 226 and 235 since my last report. The three stopes in back of the 226 will yield as follows:—No. 1, 7 cwt.; No. 2, 10 cwt.; and No. 3, 11 cwt. of lead ore per fathom. The stopes in the back of the 215, four in number, produce respectively 9, 10, 12, and 13 cwt. of lead per fm. The three stopes in the back of the 205 will produce on an average 5 cwt. of lead each per fm.

TEES SIDE.—R. Bray, Aug. 9: This week the men in cutting down the east end of Providence engine-shaft, over the wugh we cut in bottom of shaft, have come to some very nice ore in taking the Sun vein down, east towards the junction. The lode is of a very promising character, 20 in. wide, of which 8 in. is solid lead ore; and it appears that it will greatly improve going in the hazel sil, below then repeat bottom of the shaft.

To prove what we have cut, I shall send to-morrow morning to Alston station, to go off with the train for London, a specimen of the lode as broken, which I hope you will receive all right. It is a fine stone of ore, and when you see this you will say there must be a good bunch of ore in the eastern ground, on the junction of the two veins or lodes. The limestone that we have sunk through is about 12 feet thick, very hard; and this hazel that we have now to sink through has every appearance at present of being more productive for one than the limestone has been. There is no doubt on my mind, after the shaft is down the 10 fathoms, and we meet with soft ground to drive in and to work the roof away in the heading, that the ore will be taken away to a good profit to the shareholders. This is the best discovery that I have seen in the mine. I may say that we have standing in the east end of the shaft 6 fathoms high, worth more than 2 tons per fathom.

TELCARNE.—Aug. 14: Field's Lode: The lode in Field's shaft, sinking below the 20, is 2½ ft. wide, yielding 3 tons of good ore per fm. for length of the shaft (12 ft.), a beautiful lode. In the 30, east of shaft, the lode is yielding 1½ ton of ore per fathom, and in the 30 west 1 ton per fm. In the 20 west the lode is 18 in. wide, composed of gossan, spar, and good stones of ore. In the 20 east the lode is 18 in. wide, composed of gossan, spar, and flookan, and letting out more water than usual. The lode in the whinze sinking in the bottom of the 10 west is small and unproductive. In the 10 east the lode is yielding ½ ton of ore per fm. The lode in the adit, east of shaft, is 2 feet wide, composed of gossan, spar, and good stones of black and grey ore, and looking more kindly than for some time past.—King's Lode: The ground in the rise over the back of the adit, east of cross-cut, against King's shaft, is harder, and the air bad.—Enthoven's Lode: In stripping down the north side of the western level at the adit the lode is worth 12f. per fm. in the 10 east, and we meet with soft ground to drive in and to work the roof away in the heading, that the ore will be taken away to a good profit to the shareholders. This is the best discovery that I have seen in the mine. I may say that we have standing in the east end of the shaft 6 fathoms high, worth more than 2 tons per fathom.

WEST POLMEAR.—W. Boddy, Aug. 15: The 20 fm. level cross-cut south is driven 39 fms.; we have intersected a branch, underlying 2 feet in a fathom, about 6 in. wide, and composed of spar and flookan; this has let down a deal of water, but I consider we have a few fathoms further to drive to reach the first lode. The north lode is driven west about 23 fms., and we have resumed driving east; no change to report.

WEST SHARP TOR.—Wm. Richards, Aug. 12: We have not yet cut through the lode in the 150 cross-cut; there seems to be, however, some indications of being near the south wall; water percolates more freely, and there are some spots of granite in the back of the end. Morris's shaft has been sunk about 4 ft. in the past week, and the ground in the present bottom is a little more compact, caused by some branches of quartz and chlorite having come into it from the north. I will give you the depth of the shaft and extent of the cross-cut in my next report.

WEST SNAILBECH.—J. Richards, Aug. 15: The engine-shaft is down 10 fms. 4 ft. below the 64. During this last week we have been able to do very little in the bottom of the shaft, owing to the breaking of the pumping-shaft. The new discovery referred to in my letter of yesterday as being on the top of the hill, about 100 fathoms east of the engine-shaft, and which is on the south side, is looking first-rate, considering it only being 6 feet below the surface of the ground. I am not as yet quite certain whether it is worked under or not. This I shall be able to inform you of in a few days. A sample of the lode I shall send to London to-morrow for your inspection, showing the profile character of the lode.

WEST SILVER BANK (Glandishire).—D. Morgan, Aug. 13: I am glad to hear that you have got Col. Powell's ground to the west of the Silver Bank Mines. I have no doubt but that there is plenty of lead ore, and by trenching for a few days by a couple of miners there will be plenty of lead to be seen. If you hold the Farm of Cennant, I think you will get the largest mine in Wales, as there is more talk about Great Mwyn lead ore in that place than in any other place in the neighbourhood.

WEST WENDRON CONSOLS.—R. Kendall, J. Horne, Aug. 10: The engine-shaft has been sunk this week 5 feet; ground good for sinking; lode much as last week. The flat-rod shaft is sunk 6 ft. this week; the ground is a little harder; we are getting on with the north adit as well as we can expect. No change in the adit end beyond the ground is very much improved for driving; we think we are coming near the lode.

WEST WHEAL PROVIDENCE.—J. Thomas, Aug. 12: The operations throughout the mine are progressing very favourably. The St. Aubyn's shaft, sinking below the 110, is improved for the during the week, and is now opening good tribute ground, with a kindly appearance, and is quite drained by the 120, which is now about the point where the shaft will come down at that level. I have taken two of the 120 fm. level adit to assist in sinking the shaft to make the communication as soon as possible, as it will greatly facilitate the driving of that level (the 120), and open ground for stopping. The lode in the 60 is very large. The other parts of the mine are much the same.

WEST WHEAL TREVELYAN.—G. E. Odgers, J. D. Osborn, Aug. 10: The shaftmen have commenced the plant, &c., preparatory to sinking below the 58, which we calculate will take them a fortnight. At the 58 west the ground is changing, and we think the hard capes are wearing out; we propose driving as far as the whinze sinking below the 48, before cross-cutting the lode. The lode in the whinze sinking below the 48 is 2 ft. wide, producing some very good ore; a flow has crossed it which has dislodged the lode a little, but still it is a kindly lode. The lode in the 48 west is 2 feet wide, composed of quartz, peach, and good stones of ore—saving work, and which is a promising lode, where we are expecting a change for the better; the lode in the stopes above this place is worth about 10f. per fm. The lode in the eastern stopes is worth about 8f. per fm. The ground in the 28 cross-cut north is of a very congenial killas, and which we are hurrying on with all dispatch to intersect Pryor's lode. The ground in the cross-cut south at Park's is without any alteration.

WESTHEAL AGAR.—W. Roberts, Aug. 14: In the 50 east the lode continues 4 ft. wide, producing 2 tons of ore per fm. In the 50 west the lode is 2 ft. wide, with stones of ore. In the whinze sinking below the 40 the lode is 2 ft. wide, producing stones of ore, and is likely to improve. The lode in the 70 west is 4 ft. wide, very promising, with occasional stones of ore; and the stop in the back of the 80 produces 4 tons of ore per

assured the shareholders that there was a fair prospect of the mine paying its way, they would not have passed the resolution to stop it.

Herodsfoot, 33 to 34; Hingston Down, 1½ to 2; Merlin, 15s. to 20s., and in request; North Minera, 30s. to 32s. Wheal Hope, 1 to 1½; at the meeting a call of 5s. per share (2048ths) was made. The engine has gone to work, and the prospects of the mine reported as highly encouraging for early returns. East Devon Great Consols, 1½ to 2½; the lode in the 40 west is reported as having improved in appearance, being composed of more friable quartz, with spots of yellow ore. North Roskear, 15 to 16; North Treskerby, 20 to 22; Prospektick, ½ to 1½; Sorridge Consols, 10s. to 12s.; South Carn Brea, 2½ to 3; South Frances, 11½ to 12½, and more in request; St. Ives Consols, 29 to 31, and in demand; Providence Mines, 32½ to 35, also in demand; Stray Park shares have been flattered at 24 to 25½; Tolvadden, 2½ to 3½; Trenzrom, 5s.; West Caradon, 38 to 40; Wheal Bassett, 85 to 90; Wheal Ludecott, 2½ to 3½, buyers, and in request in anticipation of a further rise; Wheal Margaret, 40 to 42½; Wheal Mary Ann, 7½ to 8½. Wheal Seton shares declined to 50, 55, sellers, and on Thursday morning shares were sold at 57 and 58, but suddenly in the afternoon a demand sprung up for shares, when they rose to 65, and leave off at 80, but not so firm. The rise is said to be owing to an improvement in the 140 cross-cut, particulars of which have not yet reached us. At the meeting the accounts showed £52 profit on two months' working. Wheal Trellawny, 13½ to 14. Wheal Unity in good request at 19s. 6d. to 21s. 6d., and shares difficult to get. Wheal Uny, 4 to 4½; Wheal Wrey, ½ to 1; West Polmear, 19s. to 21s.; Wheal Sydney, 30s. to 35s. Wheal Crebior, 10s. to 12s.; the prospects here are improving, especially in the bottom level, the 60. West Bassett, 14 to 16; Tincoff, 5 to 5½; Wheal Buller, 85 to 95; North Bassett, 3½ to 4. North Downs, 4½ to 5½; we understand a dividend of 2s. 6d. per share was declared at the meeting in Cornwall. South Condurrow, 11s. to 12s. Rosewell Hill and Ransom, 1 to 1½; the lode in the 100, west of the Troan, is now 4 feet wide, worth 30½ per fm.; the lode in the winze below the 100, west of the Troan, is now worth about 10½ per fathom. Great Tredegar have advanced to 12s. 6d., 15s., owing to a good discovery of tin. South Caradon Wheal Hooper, ½ to 1; a telegram was received late this afternoon, stating the lode in the 62 west end had improved to 8½ per fm., and likely to further improve.

On the Stock Exchange, business in Mining Shares has been rather inanimate during the week. The following prices were officially recorded in British Mining Shares:—East Caradon, 24, 24½; Wheal Trellawny, 13½; West Caradon, 40, 40; Stray Park, 24; Great South Tolgus, 38, 38½; Vale of Towy, 1½. In Colonial Mining Shares the prices were:—Great Northern Copper of South Australia, 1½, 1½. Bon Accord, 1, 1½; Kapanua, 2½; Port Phillip, 1. In Foreign Mining Shares the prices were:—St. John del Rey, 34½, 35½, 35½, Linares, 7½; Mariquita, ½; United Mexican, 4½, 4½.

The closing quotations for shares in new undertakings were as follows:—Ocean Marine Insurance, 4½, 4 prem.; Thames and Mersey Marine, 13-16, 15-16 prem.; Universal Marine Insurance, 13-16, 11-16 dis.; London and Provincial Marine, ½ dis. to par; Oriental and General Marine, ½ prem.; Mercantile Fire, 16, 11-16 prem.; Commercial Union Fire, ½ prem.; Natal Land, ½, ½ dis.; and China and Japan Steam, ½, ½ dis.

At the Swansea Ticketing, on Tuesday, 1236 tons of ore were sold, realising 14,451L 5s. 6d. The particulars of the sale were—Average standard, 104½; average produce, 13½; average price per ton, 11½, 13s. 10d.; quantity of fine copper, 165 tons 6½ cwt. The following are the particulars of the sales during the past month:—

Date.	Tons.	Standard.	Produce.	Price per ton.	Ore cap.
July 16	2529	£ 98 11 6	13 1-16	£10 13 6	£31 15 0
July 30	1071	96 9 6	18½	15 17 0	84 10 0
Aug. 13	1236	104 0 0	18½	11 13 10	87 8 4

Compared with last sale the advance has been—in the standard, 3½; and in the price per ton of ore about 8s. Compared with the corresponding sale of last month the advance has been—in the standard 5½, 15s., and in the price per ton of ore about 15s. 4d. Of the 1236 tons of copper ore sold on Tuesday, 399 tons were from British mines, which gave an average produce of 10½, and sold at an average standard of 108L 14s.—87 16s. per ton of ore. The remaining 837 tons were foreign ores, which gave an average produce of 15, and sold at an average standard of 102L 8s.—13L 1s. 5d. per ton of ore. On Sept. 3, there will be offered for sale 2465 tons of ore, from Cobre, Berehaven, Oopik, Wheal Maria, Cuba, Knockmahon, Del Soto, Laxey, Garrucha, Lochwinnoch, English and Canadian, Turkish, African, and Spanish Mines.

At Dolcoath Mine meeting, on Monday, the accounts for May and June showed—Balance last audit, 3704, 15s. 6d.; by copper ore sold, 2767, 18s. 3d.; tin ores, 11,777, 15s. 7d.; arsenic, 60s.; extra carriage of tin, 9½, 15s. 11d.—less dues and rates, 559, 15s. 6d.—11,356, 9s. 9d.—Mine cost, 5679, 3s. 9d.; merchants' bills, 2652, 4s. 8d.—leaving profit on the two months' working, 2633, 5s. 10d.; from which the half-year's income tax on profit (100L 8s. 9d.) was paid, and a dividend of 2506L (7½ per share) was declared, carrying 3977, 12s. 7d. to credit of next account. The captain's report is among the Mining Correspondence.

At the Minera Mining Company annual general meeting, on the 2d inst., a dividend of 41 per share was declared, making on the profits of last year, ending June 30, 15L 10s. per share.

At Wheal Seton meeting, on Monday, the accounts for May and June showed—Balance the last audit, 804, 16s. 6d.; ore sold and carriage, 2069, 8s. 2d.—2874, 4s.—Mine cost and merchants' bills, 2000, 19s. 1d.; leaving a credit balance 873, 5s. 7d.

At the North Wheal Robert meeting, on Monday, the accounts showed a balance of assets over liabilities of 401L 14s. 5d. The agents, in concluding their report, state that the prospects of the mine are greatly improved, and they calculate on sampling from 120 to 130 tons of ore bi-monthly, at a cost of about 650L per month. The accounts were passed, and Capt. R. B. Mann was elected on the committee, in the place of the late Mr. Hancock.

At the Kelly Bray Mine meeting, on Thursday (Mr. John Field in the chair), the accounts showed a debit of 21L 19s. 11d. A call of 2s. 6d. per share was made.

At Bryntail Mine meeting, on Tuesday, the accounts for the five months ending June showed—Balance last audit, 174L 10s. 2d.; calls received, 3917, 4s.; ore sold, 4361, 13s. 5d.; loan 554—1057L 7s. 7d.—Mine cost, 7071, 13s. 6d.; loan repaid and sundries, 3182, 17s. 8d.; leaving credit balance, 20L 16s. 5d. A call of 5s. per share was made. Capt. James Ronch reported upon the various points of operation.

At the Great Briggan Mine meeting, on Monday (Mr. Jas. Elvins in the chair), a committee consisting of Messrs. Pryor, Harvey, and Robinson, with Mr. R. Davey, M.P., was appointed to investigate the accounts from the commencement of the mine some 15 months since to the end of July last. The chief points of dispute arose through a clerical error, if any exist, of an invoice of materials entered in two consecutive cost-sheets, but not paid, and with respect to the contract for the engine. The contract seems to have been verbally made before the cost-book was drawn up and confirmed at the first meeting of adventurers—the price list, according to which all was to be charged, being handed to the person (and being still in his possession) at the time the contract was made. Several letters have passed between the parties whilst the work was in execution. Details in another column.

At the Wheal Hope meeting, on Thursday (Mr. J. Y. Watson in the chair), the accounts showed a balance of liabilities over assets of 328L A call of 5s. per share was made.

At the Wheal Grenville meeting, on Wednesday (Mr. W. H. Cull in the chair), the accounts showed a balance of liabilities over assets of 1018L 7s. 6d. A call of 4s. per share was made.

At the Great North Tolgus Mine meeting, on Monday (Mr. Paul in the chair), the accounts showed a balance of assets over liabilities of 4110L It was stated that a dividend would be declared during the present year.

At Garlinda United Mines meeting, on Aug. 7, the accounts for three months ending May showed a debit balance of 1156L 1s. 10d., which was divided pro rata. The London office of reference was ordered to be discontinued. By the report of Capts. J. Rowe and F. Pritch the terms of the prospectus on which the company was formed had been more than fulfilled, as for less than the sum stated had been employed in the pool, making a produce of 14½, which is an important event in establishing the value and quality of the ores raised from the mine. The dressing-floors not having been completed, they have been unable to return any portion of the slim tin. They had 120 hands employed on the mine.

At South Wheal Margaret meeting, yesterday (Mr. M. R. Leverton in the chair), the shares were all subscribed for, and a call of 3s. per share was made. Operations were ordered to be at once vigorously prosecuted on the south lode.

At Devon Wheal Buller meeting, on August 8 (Mr. S. E. S. Carpenter in the chair), the accounts showed—Calls received, 541L 17s. 6d.; ore sold and carriage, 481, 9s. 7d.—Mine last audit, 361, 18s. 3d.; mine cost, merchants' bills, and sundries, 435L 1s. 6d.; leaving credit balance, 110L 7s. 4d. A call of 2s. 6d. per share was made. Capt. Z. Williams and F. Kent recommended that the engine-shaft should be sunk at least 50 ft. deeper, at which point the north and south lodes will it is calculated form a junction; they also recommend that the present 35 end shaft should be continued. Captain Thomas Neill has inspected the mine, and confirms these recommendations, and also advises a rise to be put up in the back, as he believes there are good chances of a shallow deposit of ore being met with.

At the East Kongberg Native Silver Mining Company of Norway meeting, on Tuesday (Major-General Pemberton in the chair), the accounts made up to the end of June showed a cash balance of 897L The reports from the mines continue to be of an encouraging character.

At the Worthing Mining Company annual general meeting, on Monday (Mr. Cyrus Legg in the chair), a resolution was passed empowering the directors to deal with the reserved shares, by issuing them as preference shares or otherwise, as they deemed best for the interest of the company. Messrs. J. B. Elkin and A. Redgrave were re-elected auditors. Details of the proceedings will be found in another column.

At the Crown Preserved Coal Company meeting, on August 10 (Sir Ralph Howard in the chair), the accounts for the nine months ending July 18 (the period of the company's operations) showed—Capital subscribed on 1850 shares, at 5s. each, 8250L; loans obtained by company, 1850L; debts owing by company, 709L 17s. 4d.; profit and loss, 496L 18s. 4d.—11,456L 18s. 8d.—Patent right, preliminary expenses, and office furniture, 482L 16s. 6d.; plant and buildings purchased, 902L 6s. 2d.; debt to company, 127L 19s.; stock in hand, 911L 4s.; leaving credit balance, 937L 10s. 1d. The profit on the nine months' working was 496L 18s. 4d. The directors recommended a dividend of 247L 10s. (6 per cent. per annum) upon the half-year's working, but the meeting considered it unadvisable to adopt the recommendation at present. The directors reported that their principal customers had been the Peninsular and Oriental and Pacific Steam Navigation Companies, and that wherever used it had given entire satisfaction as to induce a repetition of orders. New buildings and machinery have just been completed to enable the company to meet the increasing demand—400 tons per week are at present produced. The company are prepared to grant licenses at royalties of 1s. per ton for export, and 9d. for home consumption—the licensees not to undersell the company. When the new works are in full operation the production of fuel will be doubled.

The Midland Wagon Company's revenue for the past half-year has attained a higher point than ever before reached, being 20,744L against 15,228L for the preceding six months. After paying a dividend of 10 per cent. on the ordinary stock there is a considerable margin of profit. The wagon stock, after deducting those sold, has increased to 397L Upwards of seven years' experience of the wearing qualities of their own wagons, and a careful consideration of the practice of other companies, have satisfied the directors that a depreciation fund at the rate of 6 per cent. will be ample to protect the property of the company.

The West of England Wagon Company have 145 wagons, and 35 in course of construction. The revenue account, after reserving 2½ per cent. on the cost of the wagons let on hire, as the commencement of a depreciation fund, enabled the directors to recommend a dividend at the rate of 7 per cent. per annum on the paid-up capital. The whole of the wagons are let to highly respectable parties at remunerative rates. Much satisfaction was expressed by the meeting at the gratifying position of the company's affairs, as well as at the opinions expressed by the directors—Messrs. Perry, Bagshot, Cosham, Pidditch, Ford, and Good—that as its business enlarges increased dividends would be realised.

LEEDS, AUG. 15.—Mining shares have been freely enquired after, and more business done, with little variation in prices.—Brea Consols, 17s. to 20s.; Cornwall, 15s. to 18s.; Craven Moor, 3s. to 4s.; Merryfield, 4s. 6d. to 5s. 6d.; Nidderdale, par to prem.; North Hallenbeagle, 15s. to 25s.; Wensleydale, 7s. to 8s.

MARYFIELD MINING COMPANY.—A meeting of shareholders was held in the Town Hall, Leeds, on Aug. 7.—Mr. J. Lile in the chair. Mr. C. L. Dresser, the engineer of the company, stated that they had now completed opening out the long level, which will drain the shaft to a considerable depth below where the discovery of ore was made some time since, which ore can now be got. After passing a vote of thanks to Mr. Dresser, for the assistance rendered by him, and determining to prosecute the mine with vigour, the meeting, which was a satisfactory one, terminated. We are given to understand that an additional number of men have been set to work to break down the ore and raise it in increased quantity. We are truly glad in being able to state that the opening out of the level has been completed, and that the labours of the directors, shareholders, officers, and workmen, which have been attended with great expense and difficulty, on account of the nature of the work, have, by their united energy and perseverance, been crowned with success. The water level is 1600 yards in length, and has been 2½ miles in driving, and will drain the mine to the depth of 42 fms. The working of the fine courses of ore, which were left two years ago, have been resumed. The prospects of the mine are encouraging, which we trust will be quickly followed by good and continuous dividends to the shareholders.—John GLEDHILL AND CO.

THE STRIKE AT DYLIPPE MINES.—At the monthly pay, on Saturday, the managers of these mines proposed a reduction of 30 per cent. off the prices formerly paid for excavating the mineral wealth of these hills. The whole of the miners refused to take any of the "bargains" on the terms named, and in consequence the works are standing.—*Llandaff Telegraph.*—[The "strike" terminated after a three days' battle. The men gave in, and accepted more moderate terms—a reduction of 10 per cent. on the prices previously paid. These celebrated miners will now resume their wonted prosperity, under the able chief management of Capt. Edward Williams, one of the best practical miners Wales can produce. In the last quarterly returns of sales of lead ore Dylippe was the fifth on the list, having sold 403 tons for £184. There is every probability of this quantity being continued, if not exceeded.]

Mining in IRELAND.—Two of the directors of the Schull Bay Copper Mining Company, Messrs. Joseph Thomas and Thomas Pawlett, have recently visited the mines, and the company has issued an interesting pamphlet, containing an account of their visit and their opinions concerning the appearance and prospects of the mine. It appears that the numerous buildings at the mine, and all, both at surface and underground, are in the most satisfactory condition, Captain Thomas's cobbling machine answering most satisfactorily, and saving a great amount of manual labour. Want of rain had somewhat impeded dressing operations, but more recently the progress has been as much as could be expected. In fact, the visitors sum up the result of their visit by stating that they were highly pleased with all they saw of the mine and its management.

IMPORTANT QUESTION—WIRE v. HEMPEN ROPE.—At Messrs. Longs, Keeling, and Chick's Pennywell Colliery, near Bristol, Henry Thompson was killed, and his brother badly injured, by the falling of a carriage of coal, through the breaking of a wire-rope. The rope was about 63 fms. in length, and was used on a wheel at the side of the pit. The men were at work within 12 ft. of the bottom of the pit, and when the rope broke near the mouth of the shaft its weight, together with the coal, descended upon the men. The underground bailiff said it was customary to examine the ropes every week, and that the rope in question, which had been in use about three months (about the time a rope lasts), was examined on the day of the accident. The jury examined some of the ropes in use, and found that several of the wires were broken. The Coroner said he should adjourn the inquest until Friday, when he expected the enquiry would be a very close one. It appeared to him, at first sight, that the rope must have been in a very dangerous state, and he wanted to ascertain—and the jury would not allow the matter to pass over lightly—whether the wire-rope was to be preferred to a good stout hempen rope, such as he had been accustomed to see, and if it was not around, he should desire to know why it was used. He requested the underground bailiff to tell the owners he should expect them to be in the way, and that he should require everything to be fully explained to his own and the jury's satisfaction.

SAFETY-LAMPS IN COAL PITTS.—Mr. Mathias Dunn, Government Mine Inspector, has addressed the following letter to the Editor of the *Whitehaven Herald*:—

I find that at Whitehaven, and some other principal collieries, a practice is knowingly permitted of providing a loose wire for the purpose of pushing through the gauge of the lamp, for the ostensible object of trimming the wick, notwithstanding the lamp is provided with a regular pricker for the purpose. But the real object of said practice is to heat the wick at the flame of the lamp, for the purpose of lighting a pipe, or of lighting touch-paper, for the purpose of firing shots, both objects being against the rules and against the principles of safety, inasmuch as if the introduction of said wire should damage or enlarge the spaces in the gauge it is no longer a safety-lamp. The Whitehaven colliery rule is:—"Every hever or other person to whom a safety-lamp is entrusted is strictly prohibited from interfering with it in any way whatever, beyond the necessary trimming of the wick with the pricker." The above notice will, therefore, I trust put a stop to so dangerous a practice.

FUEL.—An invention, which consists in mixing coal or coal dust with lime and water to form a compact fuel, has been provisionally specified by Mr. C. L. Hancock, of Pentonville. He mixes the materials, and after the mixture is complete he presses it into blocks and dries it. He gives the preference to slacked lime.

INTERNATIONAL EXHIBITION, 1862.—We are glad to learn that Mr. Robert Hunt, F.R.S., Keeper of Mining Records, has been appointed by Her Majesty's Commissioners superintendent of Class I.—Mining, Quarrying, Metallurgy, and Mineral Products; and secretary of the National Committee for this class.

LEAD ORES.

Mines.	Tons.	Price per ton.	Purchasers.
Cargill	86	£11 8 6	Sims, Willyams, & Co.
Keswick	25	10 12 6	W. J. Cookson & Co.
Iale of Man Mining Company	100	14 2 0	Adam Eytom.

BLACK TIN.

Mines.	Tons. c. q. lbs.	Price per ton.	Amount.	Purchasers.
Pedn-an-drea Utd.	8 8 0 6	£ 517 17 9	9—E. Michell & Co.	
Gw. Wh. Vor.	18 2 0 28	—	1214 6 8	—
Gw. Wh. Fortune.	15 12 0 15	—	1081 12 0	—
Penhals.	5 10 0 0	65 0 0	357 10 0	Harvey & Co.
Brea Consols	4 9 1 23	—	295 15 4	—

COPPER ORES.

Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	Price.
Cobre	650						

Now ready, price 1s.

**THE PROGRESS OF MINING IN 1860,
BEING THE SEVENTEENTH ANNUAL REVIEW.**

BY J. Y. WATSON, F.G.S., Author of the *Compendium of British Mining* (published in 1843), *Gleanings among Mines and Miners*, &c.

The SIXTEENTH ANNUAL REVIEW OF MINING PROGRESS appeared in the MINING JOURNAL of December 31, 1859, and January 7, 1860.

A FEW COPIES of the REVIEW of 1855, containing Statistics of the Metal Trade, the Dividends and Percentage Paid by British and Foreign Mining Companies, and the State and Prospects of upwards of 200 Mines. Also a FEW COPIES of the REVIEW OF 1852, 1853, and 1854, MAY BE HAD on application at Messrs. WATSON and CUELL's Mining offices, 1, St. Michael's-alley, Cornhill, London.

Also, STATISTICS OF THE MINING INTEREST. By W. H. CUELL.

WATSON AND CUELL'S MINING CIRCULAR, published every Thursday morning, price 6d. or £1 per annum, contains Special Reports of Mines, and the Latest Intelligence from the Mining Districts, from an exclusive resident agent; also, Special Recommendations and Advice upon all subjects connected with Mining, and interesting to investors and speculators. A Record of Daily Transactions in the Share Market, Metal Sales, and General Share Lists, &c. Edited by J. Y. WATSON F.G.S., and published by WATSON and CUELL, 1, St. Michael's-alley, Cornhill, N.B. Messrs. WATSON and CUELL have made a selection of a few dividend and progressive mines, which they have reason to believe will pay good interest, with a probability, also, of a rise in value, the names and particulars of which will be furnished on application.

INVESTMENTS IN BRITISH MINES.— Mr. MURCHISON'S REVIEW OF BRITISH MINING for the QUARTER ENDING 30TH MARCH, 1861, with Particulars of the Principal Dividend and Progressive Mines, Table of the Dividends Paid in the last Five Years, &c., is NOW READY.

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Reliable information and advice will at any time be given on application. Also, COPIES of "BRITISH MINES CONSIDERED AS AN INVESTMENT." By J. H. MURCHISON, Esq., F.G.S., F.R.S. Pp. 356, boards, price 3s. 6d., by post 4s. See advertisement in another column.

Just published, price 6d., by post 7d., **COLLIERY EXPLOSIONS, AND A MEANS TO PREVENT THEM.** BY RICHARD HUGH HUGHES.

A pamphlet replete with highly interesting historical narrative, and thoroughly business-like remarks, bearing upon colliery explosions and colliery ventilation.—*Mining Journal*.

London: F. Plummer, printer, 21, Great New-street, E.C.; and the Author, Atlas Safety Gas-Fitting Works, Hatton Garden.

NEW PATENT ACT.—Mr. CAMPIN, having advocated Patent Law Reform before the Government and Legislature, and in the pages of the *Mining Journal*, &c., now ADVISES and ASSISTS INVENTORS. The CIRCULAR of INFORMATION gratis, on application to the Patent Office and Designs Registry, 156, Strand.

Notices to Correspondents.

LIMITED LIABILITY.—In answer to "Inquirer," in last week's Journal, if the company were to enrol itself with limited liability the liability of the present shareholders would, if they so stipulated, cease with the payment of the last debt incurred previously to the incorporation with limited liability; and by the Articles the directors could be restrained from calling for more than necessary to meet the expenses, and in case of infringement the shareholders could obtain redress against them, according to the nature of the offence. The Act gives protection to the shareholders as against the creditors, but to do all this effectually and safely it would be necessary to be careful in the steps taken, and it would be prudent to employ a trustworthy solicitor to register the company, who would take care that the interests of the shareholders were carried out.—T.T.

DUCHY OF CORNWALL.—There is something hopeful in the fact that the Council of the Prince of Wales has not turned a deaf ear to the powerful appeals made in the Journal in reference to the management of the affairs of the Duchy. We hope that the same subject will be followed up, through your columns, until full justice is done to the Phoenix Company, and the pestiferous bogs of Dartmoor are turned into productive and profitable land, to which they can be easily converted, without expense to His Royal Highness, and to the great comfort and profit of those whose lands are now damaged by their baneful influence. We hope to see further articles from your correspondents upon this subject.—LOOKER-ON.

PROSPER UNITED MINES.—A Shareholder.—If our correspondent be really a shareholder, we can scarcely think he would write us such a letter; he would not have made so many great mistakes, and he would naturally have written to the manager, or the purser, for an explanation of his imaginary complaints. The meeting held in July was not a "meeting of directors," but a general meeting of shareholders, duly convened, and the pamphlet was a detailed account of what took place, by a professional reporter. We wish this plan was more generally adopted at the meetings in Cornwall, for the benefit of the out-adventurers, who cannot attend. Our correspondent has quoted the depth drained below the adit on July 25 and Aug. 8 at "feet" instead of "fathoms," and it just so happens that the draining was necessarily suspended between those dates, as they could not drop the lift until they had completed the cutting down of the shaft, which took the above time. Our correspondent states that, according to his calculation, it will take a year from this time to see the 40. Now, if he will allow us to adopt the same mode of argument on the facts, we will show him a different conclusion. If the water were out 18 fms. on Aug. 8, with only one engine at work half the month, it would appear that it should be down at least 36 fms. on Sept. 8, and 40 fms. a few days afterwards, with two engines at work during the second period. But it must be remembered that there is a good deal more to do than merely working the engines—that alone will not take out the water. There must be pitwork fixed, and the shaft cut down, while the deeper they go there is more water to lift from the levels. In the report of the proceedings of the meeting we observe that the manager was asked how long it would be before they would get down to the 40? When he replied, "that would partly depend on the condition of the shafts, which must of necessity be secured as the water was drained from them. There might be little unforeseen impediments, but, without these, he hoped to get down to the 40 in three months—possibly in ten weeks; but it depended a good deal on the state of the levels, and on possible hindrances, which could not be foreseen." We advise our correspondent to be more careful in future, and avoid exposing his ignorance of his subject.

GREAT WHEAL ALFRED.—I have received a circular from Mr. R. Nichols, one of the lords, wherein he calls attention to the wide difference in the reports made by Capt. Trelease, as compared with those of the agents, as to the amount required for further developing the 142 east—the former naming 50L, the latter asserting that it will require from 6000 to 7000L! Surely there must be something wrong here. Also, does it not seem strange that the parties who wished to close the mine did not propose to raise the 11,000L worth of ore before disposing of the machinery?—SHAREHOLDER.

GREAT WHEAL ALFRED.—I have received two circulars, with reports, from Mr. Richard Nichols, who, I believe, is one of the lords, or represents a part of the eastern ground, to which he so urgently refers. Now, to keep on the mine, with a view to prove the eastern ground, and to incur the great outlay required there, even if a discovery could be made, with the present list of shareholders is absurd. Mr. Nichols, of course, pushes it as much as possible, because it vitally affects his own interests. If he is so very anxious to work the ground, or get it worked, let him prove his opinion by buying 300 or 400 shares, and subscribing his part of the capital required to do so. It is all very fine for him to advise and press this point, when not a penny for the doing of it would come from his pocket, and if a discovery be made he would at once reap the full advantage.—A. H.

GREAT WHEAL ALFRED.—I should like to see on the statement of accounts a list of shareholders, and the amount (if any) of calls due by them. I should also like to know who gave that promissory note for calls? also who that gentleman is who for so long has been a defaulter? The agent's quarterly report should also be described in such a way (not only in this mine, but in all mines) that a distant adventurer could, if he pleased, make and keep up a section of the mine; and why not the agents send you their report of a later date, so that the very latest news of the mine should appear in the Journal on Saturday?—A SHAREHOLDER.

GREAT WHEAL ALFRED.—I notice with regret a letter signed "J. T. Keaveny," in last week's Journal. It appears to be principally a tirade against Mr. Hollow, and is very deficient in gentlemanly feeling and language, as well as showing a very narrow view of the matter. I know Mr. Hollow well, and I also know that about this mine and its business he has exerted himself a great deal; in fact, has been a most valuable member of the committee. He has several times come up to London purposely to attend the meetings, and must have been out of pocket thereby; and I have never before noticed any item charged for his expenses, in fact, I had not thought of it, considering, as a matter of course, that as a member of the committee, residing near the mine, his expenses would be paid. It seems so very patry to refer to it, that it gives a character to the whole letter. I know a little about the mine, having been for a long time a shareholder, and I must candidly say my patient is all gone. I should have voted to stop long since, but having great confidence in Mr. Hollow, I wished to see it tried a little further under his supervision. The mine has been tried and found wanting.

As regards the general management, the first commencement was under Captain T. Richards, who, of course, had the placing of all the machinery and subsequent managements had to work the mine as they found it. The letter of a "Local Shareholder" is so very comprehensive that it looks forward to the spending of another 20,000L or so.

But speculation in a poor mine, already near 300 fms. deep from surface, with inefficient machinery, is a poor affair at best.

I find that the tin is not increasing in quantity, but that the tin pitches are nearly all done, so that very little indeed is now being broken. It seems to me that all the re-workings of old GREAT mines have failed—a reference to the list shows this. As to reports from independent agents, we have had them ad nauseam, and no benefit after all.—SHAREHOLDER.

GREAT WHEAL ALFRED.—Amongst a large number of shareholders there will naturally be considerable diversity of opinion as to what should be done with a mine like Great Wheal Alfred, which has for years proved an unceasing drain on their pockets; it is unreasonable, however, in those who do not pay calls when due to complain when those who do so resolve not to support the concern longer. There is no doubt that the mine has been worked to great disadvantage for want of more machinery, but have the adventurers who complain of the resolution passed at the last meeting shown a readiness to provide their portion of the amount required to erect more machinery, and provide "the proper means," as they say, to work the mine more vigorously? The committee of management have repeatedly resisted the publicly-expressed wish of shareholders to stop the working, in the hope that the great majority of them would pay calls, and evince an earnest desire to carry on the operations in a more satisfactory manner, trusting, also, to the representations of the agents that the produce would pay the costs. Being disappointed in these expectations, they felt they had no alternative but to recommend the winding-up of the affair. If the writer of the letter signed "Justitia" will recur to what happened in the lead mine in Spain to which he refers, he may remember that the stopping of that promising concern was determined by a "committee of shareholders," unconnected with the board of management, and that the latter were forced to meet the wishes of the majority, while they believed 2s. 6d. per share, or thereabouts, if advanced, would have placed the mine in a paying condition. I think it must be within the experience of "Justitia" that "committees of shareholders" often do more harm than good. All depends on the judgment, honesty, and temper of the men appointed whether their deliberations will prove judicious or the reverse. The committee of Great Wheal Alfred have directed the mine to be inspected and reported upon by, as they believe, one of the most competent and conse-

cientious captains in the district. They hope to get his report for submission to the meeting on the 20th inst., at which all interested ought, if possible, to be present.—A. B. LAGUARDE SULPHUR AND COPPER MINING COMPANY.—"A. B." (Liverpool) had better apply for information to the secretary. Mr. Hopkins is not connected with the company; he only reported on the property, the system to be adopted, and the amount of capital required to render such an undertaking remunerative.

EAST TAMAR.—The committee issued a statement of assets and liabilities in their last circular to us, which, according to the fullest statement they could make out, amounted to 900L debit, present and prospective. Since that period ores have been sold amounting to 300L, and materials, 1800L—equal to 2100L, leaving 1200L, to our credit. Will some official be kind enough to inform us when we may expect a division of this sum?—A SHAREHOLDER.

NORTH DOWNS AND WHEAL ROSE UNITED.—A Shareholder complains of the management of this mine. He says—"In order to carry on the operations there is the following staff of officers:—A manager, one resident and one assistant agent, a local purser, and an auditor, whose salaries amount to about 40L per month, besides two engineers and four doctors though there is no engine working. Now, fellow-shareholders, ought we not to call a meeting and wind-up this affair, and put a stop to the heavy agencies, which are not required, and enforce such reforms as may appear necessary on obtaining a full explanation respecting our actual position and prospects?" Mr. Evan Hopkins is on his way to some of the mining districts of Ireland. Letters addressed Imperial Hotel, Sackville-street, Dublin, will find him.

THE MINING JOURNAL Railway and Commercial Gazette.

LONDON, AUGUST 17, 1861.

AURIFEROUS STEEL.

A very remarkable invention, emanating from Mr. Wm. Longmaid, is at present attracting a large amount of public attention—his proposition being no less than to improve the quality of iron and steel by adding to it a certain proportion of pure gold, or of gold and platinum. As the subject of producing cheap steel is one of the utmost importance to the mercantile world, we take the opportunity of publishing Mr. Longmaid's complete specification, an early copy of which we have just been enabled to obtain. Mr. Longmaid states:—

This invention has for its object the alloying of iron and steel with minute quantities of gold and platinum, thereby greatly increasing the strength and otherwise improving the quality of the metals so treated. The gold and platinum are combined when in a melted state with the iron and steel when they are in a melted state, or in the process of their manufacture. Having thus stated the nature of my said invention I will proceed more fully to describe the manner of performing the same. I would state that I have found that gold or platinum may be used alone, or they may be used together. I would also state that a very minute quantity of gold or platinum, or of the two together, will produce a very marked and evident improvement in iron, and also in cast-steel, thus I have found that the use of 3-16ths to 5-16ths of an ounce of gold or of platinum, or of the two together, materially improves the density, ductility, and tenacity of the iron or steel. The most convenient mode of applying gold or platinum in minute quantities to melted iron or melted steel is first to cast small ingots of iron or steel, each containing a suitable quantity of gold or platinum, or of both those metals, for alloying a ton or other weight of iron or steel on which it is desired to act at one time. The gold or platinum is introduced into the ingot moulds, then the melted iron or steel is run into the ingot moulds, and such ingots are introduced into the reverberatory or other furnace or vessel containing the melted iron or steel which is to be improved by the action of gold or platinum, or of both of those metals, and it will be found that when these ingots have been melted and mixed with the iron or steel the gold or platinum will be diffused very intimately throughout the whole mass, and the gold or platinum, or both those metals, will consequently act on the whole mass so as to produce the desired beneficial result thereon. Or the gold or platinum may be otherwise introduced into the melted iron or steel, and in cases where gold is contained in quartz, or other minerals in ascertained proportions, the quartz or minerals may be employed without first separating the gold therefrom, and the same be used in the blast-furnace or otherwise. I would state that, with the exception of an alloy of iron for making bells, I have not found it desirable to introduce more than 1/2 ounce of gold or platinum, or of the two metals together, to each ton of iron or steel, though for special cases it may be hereafter found desirable to exceed these quantities. For bells I have employed as much as 3 ounces of gold with great advantage in getting a very sonorous metal. When preparing iron for ordinary castings I usually employ at the rate of about 1/4 ounce of gold or of platinum, or of the two metals together, to 1 ton of cast-iron, but if I desire to make hard castings I employ up to, and even exceed, 1/2 ounce of the two metals, or of one of them. When puddling iron I introduce the gold or platinum (whether used directly or in an ingot, such as above mentioned) just as the metal begins to come to maturity, and I employ at the rate of about 1/4 ounce to each ton of the pig or cast-iron used. The puddling process is then finished in the ordinary manner, and I apply gold or platinum, or both of those metals, in like manner when making puddled steel. When making malleable iron or cast-steel by other processes than by puddling I introduce the gold or platinum at any stage of the process whilst the metal is still fluid; or when making ordinary cast-steel I melt the gold or platinum, or both of those metals, with the steel in crucibles or otherwise. In the above description I have given the precise quantities and proportions of gold and platinum which I prefer to employ, and I believe that the use of gold or platinum in much larger proportions will add to the expense without producing any material or proportionate advantages. I would, however, state that I do not confine my invention to the quantities or proportions above given, so long as gold or platinum are used in minute quantities to improve the qualities of iron and steel. I would here state that I am aware it has been proposed to combine or melt gold and platinum with steel in order to obtain a compound metal consisting of steel and gold, or of steel and platinum, the gold or platinum being used in very large quantities in every case. I believe several pounds of gold or platinum to the ton of steel were used, but such efforts or experiments failed in producing any beneficial results; I, therefore, wish to be understood that the peculiarity of my invention consists in applying gold and platinum in minute quantities in order to take advantage of the peculiar properties I have discovered that gold and platinum possess (when used in very small quantities) in improving the manufacture of cast and malleable iron, and also cast-steel.

ALUMINIUM AND ITS USES—THE SAFETY-LAMP.

—At the recent meeting of the North of England Institute of Engineers, Mr. J. L. Bell, of Newcastle-on-Tyne, exhibited an improved safety-lamp, manufactured of fine aluminium gauze instead of that usually employed, the advantages being that the aluminium does not obstruct the light to the same extent as common wire, that it is incorrodible, and extremely light. Until Messrs. Bell Brothers introduced their process of manufacture the price of the metal prevented its application for any but experimental purposes, but now that a constant supply in the pure state can be ensured at 50s. per pound little difficulty will be experienced in using it even for such inexpensive articles as safety-lamps. Concerning the metal itself, it may be stated that Messrs. Bell Brothers have acquired such power over it from their continued experience that they are enabled to manipulate it as easily as the ordinarily used metals. They have found that it melts at a temperature lower than silver, but not so low as zinc—the melting being performed in a common earthen crucible without flux; it can be beaten and rolled as thin as ordinary gold leaf, the only remarkable property being that it requires frequent reheating, owing to it quickly losing its temper. By a simple process it can be readily drawn into wire, but the reduction of diameter must be very gradual, and the re-heating very frequent. When fine wire is required this heating process becomes a delicate operation, for owing to the fusibility of the metal a comparatively small excess of temperature would reduce the whole coil to a liquid mass. Messrs. Bell Brothers contend that the metal is not affected by exposure to the air, or by any of the impurities usually present in the atmosphere of towns, a circumstance, we presume, which is the result of their improved mode of reducing the metal since Mr. Stephen Barker, of Birmingham, who was amongst the early manipulators of the metal found that spoons which he made from the metal turned black after a comparatively short exposure. The cause of this difference would, no doubt, afford an interesting subject for discussion, and it is probable that the definite settlement of such points as these would do much to secure the general adoption of the metal for industrial purposes. In the meantime it may be hoped that Mr. Bell's proposal to make aluminium safety-lamps will meet with an amount of success which will well repay him for the trouble he has taken in the matter.

THE COPPER TRADE OF CHILI AND BOLIVIA.—The following statement of the copper produce of Chili and Bolivia during the year 1860 is taken from a circular published by Mr. W. P. Robertson, of Valparaiso:—

	Fine copper.	Total.
From Chile for England	Qts. 495,659	1,163,720
" Bolivia for England	48,825	213,394
" Bolivia for France	2,400	3,518
" Chile for United States	113,107	423,877
" Chile for Germany	9,445	32,572
" Chile for Belgium	6,357	20,475
" Chile for China	1,387	1,387
" Chile for Peru	141	141
Total	Qts. 738,085	1,925,711
Exported from Chile, total fine copper		Qts. 656,860
Increase in Chile of fine copper on 1858-59		51,225
Decrease in Bolivia of fine copper on 1858-59		101,839
Total increase of copper ores, &c., in Chile and Bolivia on 1858-59		5,979
Total increase of fine copper ditto, 1858-59		279,066
Total increase of fine copper ditto, 1858-59		95,560
Increase of all kinds		Qts. 374,626

The amount of freight paid on the shipments to England, at an average of 32. 5s. per ton, would be nearly 225,000L, and on the shipments to the United States about 358,600L, taking \$17 as the average rate.

THE MINERAL WEALTH OF CANADA.

THE RAMSAY LEAD MINES.

Every mail from Canada brings us additional information, now that public attention has been directed in that channel, regarding the recent discoveries of the vast mineral resources of that province. Our readers will recollect our report of the Acton Copper Mine, near Montreal, the first mining adventure east of Lake Superior, which attracted such general attention, not only in America but in England. The great success attending that working has led to other important mineral discoveries, the chief of which is the Ramsay Lead Mines, near Perth. The *Carleton Place Herald*, near which the mines are situated, says, in speaking of the village from which the mine takes its name—

All Ramsay now wants is enterprise and capital to make it a great mining district. All that have yet seen the mine agree that there is no other mine showing such favorable prospects at present. Such a lode is seldom to be seen; it can be traced on the surface for nearly 300 fathoms, averaging at its smallest from 2 to 8 feet wide; the spar on both sides of the vein looks well, and the l

differs materially from Petherick's, in causing a never-returning flow of water upwards through the sieve; the water being forced up by a kind of pump, to which it returns again after passing through the sieve, so that the same water may be used over and over again *ad infinitum*. This seems to me a very important improvement over any similar machine at present in use. In the ordinary jugging-machine, and also, although in a less degree, in Petherick's Separator, the return of the water back through the sieve neutralises to a certain extent the separating effect of the specific gravity of the matters operated on, and forces certain particles to the bottom of, and even through, the sieve which otherwise would not get there. In Hunt's machine, on the contrary, the flow of water being always upwards, and there never being any returning backwards, the matters fall during the interval of each stroke by the effect of their specific gravity alone, undisturbed by any rush of returning water, by which a much more effectual separation is necessarily effected. It is some years ago since Mr. Hunt has completed his machine, but he has never yet brought it before the public prominently; I understand, however, that next year, at the Exhibition of 1862, he intends doing so, and having its merits fully tested. But although Mr. Hunt has thus failed to push his machine into general use it is yet by no means untried. In dealing with halvans, Mr. Hunt has been a most successful man, indeed by far the most successful man I know of in that line, and he attributes his success principally to the use of this machine. At Pont-pean Mine, at Bruz, in Brittany, he returned upwards of 30,000*t*. worth of ore from halvans pronounced by the French mining engineers to be worthless, and he has had a like success in other underlings of the same kind, so that in this particular branch he is a thoroughly practical and successful man. His improvements are not like those of too many patentees, mere speculative dreams, but the result of a daily experience during many years of dealing with poor halvan ores. Speaking of Mr. Hunt, I may just mention one thing. He is of opinion that, in treating ordinary work, there is no advantage in the round bumble over the ordinary rectangular bumble—rather the contrary. In very poor work he thinks it may be otherwise. Now, this is the opinion of almost all the leading agents in Cornwall, who won't adopt the round bumble; this opinion has been inclined to think so; but the testimony of so experienced and unprejudiced a man as Mr. Hunt is of considerable weight, as he can have no possible prepossession in favour of Cornish modes of working.

REPORT FROM NORTHUMBERLAND AND DURHAM.

AUG. 15.—The export Coal Trade, on the whole, appears to be in a flourishing condition, the total exports from the north-eastern ports during July having been 466,492 tons, against 381,212 tons in July, 1860, being an increase of no less than 85,280 tons. The whole of the ports, without exception, show a marked increase. The advance of the export trade will, therefore, tend in some measure to compensate for the comparative falling off in the coasting trade. The port of Blyth continues to increase its shipments rapidly, and Sunderland progresses most favourably. The cry for dry deep water docks in the Tyne waxes stronger; the great necessity for this is pretty generally felt and acknowledged at present, and will there is no doubt be supplied shortly. The Tyne Commissioners have effected great improvements since the commencement of their labours, and they certainly have plenty of work on their hands at present, including the carrying out of a most comprehensive scheme for the general improvement of the river; some little consideration ought, therefore, to be accorded to them. On the whole, the colliers of the district are pretty well employed, and are earning good wages. We have nothing of particular moment to record respecting any part of the district. At the Hartley Colliery the men got a little agitated lately on account of the critical position in which they are placed. At this steam coal colliery a large quantity of water is to be lifted, one of the largest pumping-engines to be found in the district being employed for this purpose. The shaft is not deep, and two lifts of pumps are employed, the lower one being 22 in. in diameter, and the upper one 30 in., the engine cylinder being 80 inches, and one lift is placed at each end of the beam. At the extremity of the workings, to the south-east, is situated some old workings, expected to be holed into, and which contain a large quantity of water. The pressure of this water, and some feeders met with in the workings, caused the apprehension. Mr. Dunn, the Government Inspector, being on his rounds, the men communicated their fears to him, and he, after making enquiry into the circumstances, and a thorough inspection, had the satisfaction to report that every precaution was being taken by means of bore-holes in advance, &c., for insuring safety. In this district it has long been acknowledged that nothing but a rigid system of boring can ensure safety on approaching a drowned waste, even when plans are exact, as too much dependence ought not to be placed on the accuracy of those plans. It is, therefore, always necessary to prove the position of the old workings by boring in the first instance. And even by those means immunity from danger is not always secured, as the water sometimes escapes at faults, fissures, &c. This shows the very great care necessary to be taken in such cases. The Brockwell seam has been won at the Shildon Lodge Colliery; after much trouble and expense. This is a most important seam in the Auckland district; the successful achievement of this, therefore, must be highly satisfactory to the owners and all concerned. On Thursday, the 8th inst., the owners entertained the workmen and their wives to a substantial tea; about 180 sat down. The chair was taken by Mr. Jno. Vaughan, one of the owners. Mr. J. Marley, the consulting engineer, introduced the subject of the meeting, and the Chairman followed in a kind and feeling speech. Afterwards, interesting addresses from the Rev. J. Manisty, of Shildon; Mr. A. L. Stevenson, mining engineer, and others, were given. Mr. Marley gave credit great to Mr. J. Coxon, the sinker, and regretted his and Mr. Spencer's unavoidable absence. The meeting broke up highly pleased with the evening's proceedings.

The late Mr. Losh, a gentleman who died lately on the Tyne, may be said to have been one of the fathers of the Tyne. He has been through a long life most intimately connected with the trade and commerce of the North, and more particularly with the establishment of iron-works, foundries, and chemical works. His career commenced no less than 70 years ago. He received his education in Paris, but being of an ingenious turn, and having a genius for mechanics and other sciences, he applied himself to those pursuits, and he was the first to establish chemical works on the Tyne, which have gradually enlarged until the present time. At a later period, in connection with the late Mr. Wilson and Mr. Bell, he established on a small scale the iron-works at Walker, which have since been extended until at the present time they assume most gigantic proportions. He, also, along with Mr. George Stephenson, applied himself in devising many improvements in rails, locomotives, and other similar apparatus. This was in the infancy of railways, and many of those improvements are due to the energy and ingenuity of Mr. Losh, one of the most remarkable of their inventions being the wrought-iron wheel for locomotives.

REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

AUG. 15.—The commercial prospects of the country are not very satisfactory, though the prospects of an abundant harvest is subject for much gratification, and will, no doubt, have a beneficial effect on trade generally. During the past week the reports of the state of the Iron Trade are singularly confirmatory of the general inactivity which prevails throughout all the branches of the trade; indeed, at several of the principal works in Yorkshire and Lancashire the wages of the men are reduced 10 per cent., and in some cases only half time is being worked. The Steel Trade is very dull, and the difficulty of carrying on a trade with the States is such, on account of the irregularity in the receipt of remittances, that few merchants will accept the orders which are sent. In the district of Middlesborough, in Yorkshire, the whole of the men in the iron trade have had their wages reduced on account of the dullness of trade. The departments of the iron trade in which most business is being done are for rails and plates for ship-building. The Sheffield merchants appear to be devoting a large amount of enterprise towards the cultivation of this particular branch of the trade, and they bid fair to gain a reputation as high as the one they have obtained for the manufacture of railway springs, which is in a great measure confined to Sheffield. Messrs. Whitmore and Co., the iron merchants of Liverpool, have failed, their liabilities being reported at 80,000*t*. Their creditors are principally confined to South Staffordshire and Lancashire. It is believed that the critical position of American affairs has had much to do with this stoppage.

The Coal Trade is comparatively in a much more satisfactory position than the iron trade, though the depression in manufactures generally must have seriously lessened the consumption. The most noticeable feature connected with the trade is the largely increased supply of hard coal for steam purposes. The production in Derbyshire of late years has been more than doubled, and notwithstanding this increase, the demand is quite equal to the supply. In Lancashire and Yorkshire the trade is very dull, and there are few orders in hand. The half-yearly reports of the different railways have just been issued, and although there is a general falling off in the traffic receipts for passengers and merchandise, there is a steady increase in the receipts for minerals, particularly on the Midland; the increase on that line being nearly 6000*t*. for the half-year.

An evidence of the increasing good feeling between the collierymen and the colliery inspectors, it is gratifying to record the presentation, by the collierymen of West Lancashire and North Wales, of a testimonial to Mr. Peter Higson, the Government Inspector for the district. An appropriate inscription was engraved upon the testimonial, which was presented at a dinner given at the Adelphi Hotel, Liverpool, at which Mr. A. H. Lett, jun., occupied the chair. Mr. Higson's acknowledgement of the compliment was extremely well received, and certainly reflected much credit upon him from the manner in which he accepted it—as a mark of good-will towards him, but not as calculated to induce a feeling of friendship which would prevent him from continuing to do his duty as impartially as he had always heretofore endeavoured to do it. The health of Mr. John Lancaster, who has been the means of introducing into the district many of the most valuable and important improvements in connection with colliery engineering, was likewise drunk, and Mr. Lancaster having acknowledged the compliment, several other speakers were given, and the meeting separated.

The late colliery inundation at Clay Cross has excited universal sympathy for the proprietors, and the widows and children who have suffered by the disaster. A public meeting was held on Friday, at Chesterfield, presided over by the mayor of the town, and most influentially attended. The speeches were full of sympathetic feeling, and the proceedings were marked by something more substantial, in the form of a public subscription. The proprietors of the Clay Cross Works gave 50*t*. Mr. Barrow, of the Staveley Works, gave 50*t*, and most of the neighbouring coal and rommesters gave 25*t* each, which made up a subscription in the room of about 850*t*. The men employed at the Clay Cross Works also held a meeting on the following day, and it resulted in a subscription of about 160*t*. There is no doubt that a much larger sum will be obtained, and that under the direction of the committee the widows and children will be amply and permanently provided for.

The late dry weather has been most favourable for the miners of the Peak, and a steady progress is being made in the district. At present there is nothing of material importance to write about. The North Derbyshire Mining Company are pushing forward with the new shaft to get to the vein; the Mill Towns are not yet under the toadstone; and the Mill Dam are getting a tolerable quantity of ore. Some of the shareholders have

been surprised at being called upon for further capital, but as we are not in the secret of all the details of management we are not in a position to give an explanation. The other mines are much in the same position as last noticed, and nothing doing in shares.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

AUG. 15.—The Iron and Coal Trades of this district cannot be reported as in a prosperous state. There have been scarcely so many orders received in the past as in the previous week. At the same time, orders continue to come in at the leading iron-works, which are sufficient to keep a large portion of the machinery in tolerably active operation. The demand runs chiefly upon heavy samples, and for iron of reliable brands. Very little iron has been turned out in South Staffordshire during the week, because most of the workpeople have been keeping holiday at the Wolverhampton races, and for their position in life there are few men who are fonder of the excitement of the race and a wager upon it than the ironworkers and colliers of South Staffordshire. Few of the works recommended work before this (Thursday) morning.

A few failures have occurred by which the iron trade in this part of the country will be unfavourably affected. By the failure of Messrs. Whittemore and Co., iron merchants, of Liverpool, for about 80,000*t*, some ironmasters in both divisions of this county will be losers, but the losses it is expected will fall upon firms who can bear them. The stoppage of Mr. T. R. Oswald, iron shipbuilder, of Sunderland, with liabilities estimated at from 60,000*t*. to 70,000*t*. will result in a somewhat heavy loss on one South Staffordshire firm, but, happily, as in the other failures, no serious results are anticipated. A number of makers whose concerns are of no great magnitude are creditors to Mrs. Elizabeth Tildesley and Son, iron merchants, of Willenhall, who have petitioned the Birmingham Bankruptcy Court, and have obtained protection. The liabilities are reported at 17,000*t*. and an offer of 5*t*. in the £ is made. The creditors have appointed a committee of their number to inspect the books, and report to a future meeting. For good pigs makers and their agents are firm at the rates which regulated the sales of quarter time, but for inferior descriptions of North Staffordshire make low prices are accepted.

The Coal Trade in the manufacturing department is dull; and the demand which had begun to spring up for household samples a fortnight ago is not now so perceptible.

The Hardware Trade are not so well off for orders as they were a week ago; nor is any improvement looked for in the country trade until after harvest. The fall of 3*t*. per ton in the price of tin is not expected to stimulate purchases, so badly off for orders are the tin-plate makers generally. Many of the works in the general manufacturing trades had not recommenced work after the races on Thursday night. Much satisfaction is felt among persons who have for some time been occupied, and not unsuccessfully, in the mining districts of East Worcestershire and South Staffordshire, in improving the moral tone of the working classes; there, that some twelve magistrates, headed by Lord Lyttleton, the Lord Lieutenant of Worcestershire, have addressed a letter to the *Times*, denying the accuracy of the startling statement which is made in the report of Mr. George Coode, one of the assistant commissioners appointed under the Education Commission, to the effect that "every magistrate assured him that it was held rather a shame to a young woman not to have a bastard child." The 12 magistrates referred to say "Mr. Coode is personally unknown to a large majority of the magistrates, and we positively deny having given him any such information. His statement in this respect is quite untrue, and we consider such charges against the working classes to be totally unfounded." We concur with Lord Lyttleton in believing that the assistant commissioner could hardly have meant them, or supposed that they could be understood literally, for, as his lordship remarks, "so understood can hardly be applicable to any part of any Christian country."

THE IRON TRADE—FURNACES IN AND OUT OF BLAST.

Continued from last week's Mining Journal.

NEWCASTLE-ON-TYNE DISTRICT.

Districts.	Furnaces.	In.	Out.
Birtley Iron Company, Birtley Ironworks	3	2	1
Bell Brothers, Wylam	1	1	0
Bell, Hawks, and Co., Wear	1	1	0
Jarrow Iron Company, Jarrow	4	2	2
Jarrow Iron Company, Wallsend	2	2	0
Losh, Wilson, and Bell, Walker	5	3	2
Morrison, James, Ferry Hill	12	2	0
Pattinson, H. L., and Co., Felling	2	0	2
Washington Chemical Company, Washington	1	0	1
Total.....	21	13	8

LANCASHIRE AND CUMBERLAND DISTRICT.

Harrison, Ainslie, and Co., Newland, Bush Barrow,	21	2	2
Dudson, Lorn,	4	3	1
Kirkdale Hall Hematite Company, Kirkdale Hall	1	0	1
Lonsdale, Earl of, Seaton	1	0	1
Lewis, Edwin, Harrington	1	0	1
Schneider, Hannay, and Co., Ulverston Hematite Iron Works, Barrow	16	4	2
Whitehaven Hematite Iron Co., Whitehaven Hematite Iron Works	31	3	1
Workington Hematite Iron Co., Workington Hematite Works	16	4	2
West Cumberland Hematite Iron Company (Limited), West Cumberland Hematite Iron Works	24	0	4
Total.....	30	16	14

YORKSHIRE DISTRICT.

Bowling Iron Company, Bowling	6	5	1
Beale, S., and Co., Holme	2	2	0
Beale, S., and Co., Parkgate	1	1	0
Coopers and Co., Worsbrough Dale	1	0	1
Dawes, W. H., and George, Elsecar, near Barnsley	3	2	1
Dawes, W. H., and George, Milton, near Barnsley	2	2	0
Farnley Iron Company, Farnley	4	3	1
Hird, Dawson, and Hardy, Low Moor	9	6	3
A. Harding and Co., Beeston Manor	12	2	0
Newton, Chambers, and Co., Chapeitown	2	0	2
Newton, Chambers, and Co., Thorncleif	2	2	0
Whitby Iron Company, Beck Hole	2	0	2
Total.....	36	25	11

SOUTH WALES DISTRICT.

Aberdare Iron Company, Abernant, Glamorganshire	3	0	3
Aberdare Iron Company, Glyn Neath, ditto	3	0	3
Bailey Crawshay, Aberaman, ditto	3	0	3
Brifton Ferry Iron Company, Briton Ferry, ditto	2	2	0
Booker, T. W., and Co., Pentrich, ditto	2	2	0
Brodgen and Sons, Tondu, ditto	2	2	0
Crawshay, William, Cyfarthfa and Ynysfaeth, ditto	11	11	0
Crawshay, Francis, Tredegar Iron and Tin Works, ditto	3	0	3
Dowlais Iron Company, Dowlais, ditto	18	15	3
Forman, W. H., Penydarren, ditto	7	0	7
Gadlys Iron Company, Gadlys, ditto	4	3	1
Hill, Anthony, Plymouth, ditto	10	10	0
Llewellyn and Co., Banwen, ditto	2	0	2
Llynny Vale Iron Company, Llynny Vale, ditto	4	3	1
Parsons, William, Onllwyn, ditto	12	1	1
English Copper Company, Cwm Avon, Oakwood, ditto	7	4	3
Talbot, T. M., Cefn Cwae, ditto	2	0	2
Vaughan, N., Venant, ditto	2	0	2
Ystalyfera Iron Company, Ystalyfera, ditto	11	5	6
Bailey, Crawshay, Esq., M.P., Varteg, Monmouthshire	2	0	2
Bailey, Crawshay, Esq., M.P., Goloson, ditto	3	0	3
Bailey, J. and C., Nantyglo, ditto	12	12	0
Blaenavon Iron Company, Blaenavon, ditto	6	6	0
Ebbw Vale Iron Company, Abercynon, ditto	6	2	4
Ebbw Vale Iron Company, Ebbw Vale, ditto	4	2	2
Ebbw Vale Iron Company, Pentwyn, ditto	2	0	2
Ebbw Vale Iron Company, Sirhowy, ditto	4	2	2
Roper, E. S., and			

we have not yet cut the south wall of the lode in either the middle or the deep adit, though we are driving on each level with six men. The other parts of the mine continue as last reported on. Since my last report I have sent 70 tons of ore to the port, and have now about 240 tons at surface, which can be cleaned up to a high percentage. The ore raised from this mine alone to this date is above 600 tons, taken out of 250 fms. of ground, dead levels included, and we can, I think, take 200 tons more from the backs above the deep adit, as far east as we have gone. We must now drive the deep adit end east, to open more ore ground.

NORTH RHINE.—June 26: Captain Barker reports:—I have the pleasure to inform you that the lode in the 45, south of Cope's engine-shaft, on the main lode, has greatly improved in the last few fathoms, so that it is at present a large ore lode, although the ore is of a low percentage. It is very likely the lode will make rich for copper at the next level, for it appears that the 45 is driven on the top of the ore, therefore I have suspended the driving of the above end for the time, or until the engine-shaft is sunk to the 60, and the above lode cut at that level; then we shall be able to work that part dry.

WORTHING.—June 21: We are in a position to raise a large quantity of ore monthly. Ore sampled during the past month about 130 tons. We have a large quantity of dredge ore on surface to crush and dress. As to the smelting operations, the clay is very thin and cleaner from metal, according to my examination, than it was before. We intend to work three furnaces next week—a calciner and two reducing furnaces: these furnaces are capable of reducing 60 tons of raw ore per week. As to the mine, I believe we are in a position to make it pay well according to the ore we have laid open throughout the mine. During the past year we have dressed from 600 to 700 tons of ore, and have a large quantity of ore now at grass ready for dressing. We believe now that our two furnaces will have given our monthly statements will have especial interest in showing an increasing and a very great improvement in our returns, and that our profits will be according for a dividend at our next annual meeting: 47 tons of regulus had been shipped via Melbourne, and 35 tons of copper of better quality than usual were at the port ready for this vessel.

ENGLISH AND AUSTRALIAN COPPER.—June 25: There were eight furnaces at work, besides refineries. The stock of coal at the works was 1641 tons, and of fuel 4813 tons. The quantity of coal at Kapunda was 2128 tons. The company's operations were proceeding very satisfactorily.

WHEAL ELLEN.—June 24: There is not much alteration in the mine since the last report.

PORT PHILLIP AND COLONIAL GOLD.—The ore crushed in six weeks was 4082 tons, yielding 3133 ozs. 12 dwt. 22 grs. gold, or an average of 15 dwt. 8 grs., the yield having decreased in the last fortnight to 12 dwt. 17 grs. per ton. The receipts on Clunes account were for six weeks, 541M. 15s. 7d.; expenditure, 2615L. 7s. 9d.; profit on six weeks, 2803L. 7s. 10d. The machinery was in good working order. A remittance of £6000 has been received by this mail.

DUN MOUNTAIN.—June 8: Contracts have been signed for the earth-works and bridges of the remaining seven miles of line, with seven working parties, and the price will be 30 per cent. under Mr. Dorpore's estimate, or a saving of 5000L. The time for the completion is two months for the three lower sections, and three to four months for the remainder.

BON ACCORD.—June 25: The Chairman of the committee writes, I have, in company with Mr. A. Scott and Mr. Alfred Hallett (a gentleman of great experience in mining matters in the colony, and in a semi-professional capacity), inspected all the workings at the lower levels. Mr. Hallett was very particular in his examinations, and has given a lengthened report, with which I agree almost entirely, and the shareholders may rely upon its being an unvarnished one. Captain Jeffery expresses himself much more strongly than Mr. Hallett as to the probabilities of cutting a paying lode at the 50, to which we are fast approaching. The following is an extract from Mr. Hallett's report:—“Reviewing the above details, I am of opinion that the Bon Accord Mine will be what is termed a deep mine, that from the change in the character of the lode at the 40, accompanied with a change in the ground, and from the settled nature of the rock now being sunk through in the engine-shaft, you have a right to expect the lode to present a more decisive character on its being cut at the 50, as well as the nature of the lode being so uniform in character, as shown in the driving north on the lode at the 30 fathom level.”

SCOTTISH AUSTRALIAN.—June 20: Good Hope Mine: Dickson's shaft was down 26 fathoms, leaving 4 fathoms further to be sunk before the lode could be cut by driving at the 30. Arrangements are being vigorously pushed on to commence operations on the 2560 acres of coal-bearing land leased by the company, known as the Wellerley Estate, situated about 5½ miles direct west from the port of Newcastle, New South Wales, on the south side of the Great Northern Railway, in that colony. The superintendent has had for some time under consideration, and by the present mail informs the board that he has concluded arrangements for the acquisition by lease on royalty of a remarkable mineral property of 564 acres, known as the Oaky Creek Copper Mine, in the county of Bathurst, New South Wales, 40 miles from the town of that name. He thus writes respecting it:—“I had formed favourable expectations with reference to this property, but, on inspection, I found a much greater show of mineral wealth than anticipated. At the same time, the prominent features of the formation were strikingly in accordance with the description Captain Dalley gave me of the same at St. Austell in 1858, which description I then took down and now have by me. What arrests attention as a surface appearance is a large mass of ironstone, which, on further examination, appears pretty clearly to be the back of a masterly lode running in an easterly and westerly direction. The ground falls a little towards the creek which has given the name to the property, close to where the above massive deposit or formation of ironstone shows itself, so as to permit of an adit having been driven along the course of the lode. This adit has been carried in to the extent of 10 or 12 fathoms. It passes through various shoots of copper ore, embedded in gossan of the richest and most favourable character. Capt. Johns accompanied us with a pick, and he broke ore in places in the sides, top, and bottom of the adit, along its whole course. At about three-fourths of its length from the mouth a winze has been sunk to the depth of about 8 feet, and into this we went and saw ore (and rich ore) broken from the bottom of it. We saw 100 tons of ore, some of it very good, which had come out of the adit and winze. The breadth of the lode we believe to be no less than from 35 to 40 feet. Near the wall of the lode furthest from the adit, and nearly on the level from which that has been driven, a shaft has been put down to a depth of, I believe, 20 feet. The adit and the shaft together, one being in the neighbourhood of one wall and the other of the other, seem to afford most encouraging evidence of the existence of a powerful and productive lode, from which it may be anticipated that considerable quantities of copper ore may at a very early period be obtained. I must indeed candidly assure the board that I have seen nothing to which I can compare this company, except the Burn and the Kapunda, in South Australia. I would on no account speak in disparagement of the Good Hope, but I must admit that the Oaky lode, from its superior breadth of ore-bearing ground, it may be said in sight, gives warrant for a more certain expectation of immediate productiveness than the other. . . . The ores that have been obtained from the Oaky Creek lode are principally carbonates and oxides, the only ore containing sulphur which it has yet produced being that composite one, grey ore.”

REDUCTION OF COPPER ORES.—The *Adelaide Observer* of June 26 contains a very favourable notice of Mr. Henderson and his patent for the treatment of poor copper ores, a description of which appeared in the Journal during Sept., Oct., and Dec. The writer concludes:—“Supposing all that is expected of Mr. Henderson's process to be verified by experience, its importance to this colony can scarcely be overestimated, especially coming into action, as it does, just at the time when it is to be presumed that thousands of tons of poor ores will be turned up which would not pay for working by our ordinary processes, but which may be rendered highly remunerative by this. Anyone who has seen the refuse ore at the Burna Burna Mine will comprehend the value of such a discovery as Mr. Henderson's to the shareholders of that important concern; and as Wallaroo, at Mount Barker, and at Kapunda, its application will not be less important.”

NOVELTY IN FIRE INSURANCE.—The recent decision of the fire insurance companies to increase the rate of premium payable upon the insurance of property against fire has been met in a way which was probably not at all anticipated. A meeting of merchants, brokers, and other citizens, was held at the Mansion House, and a committee was appointed to consult with the combined fire insurance offices, relative to the newly-fixed rates, and this committee decided upon the establishment of an independent company—the Commercial Union Fire Insurance Company—with a capital of £2,500,000L., in 500,000 shares, one-tenth of which only—5L. per share—is intended to be called up, so that nine-tenths of the nominal capital will remain as a guarantee fund. The board comprises twenty-two of as respectable names as could be brought together. The grounds upon which the promoters conclude (and as the promoters are the directors themselves, and all practical business men, it may be presumed that their conclusions can be relied upon) that a new and independent company was required, is that the old companies have taken undue advantage of an exceptional calamity to impose excessive rates. The grand object of the new company is to be a strict classification of risks upon the equitable principle that each risk shall be made to pay for itself. One class of insurers will, therefore, no longer be compelled to pay for others. With these aims there have been combined on the board the representatives of two or three leading houses in each of the various walks of business, and others have yet to be added. The company thus starts with a considerable amount of business secured, and as more liberal arrangements than are now obtainable upon floating and short-time policies are promised, it cannot be doubted that the undertaking will receive ample support.

SMOKE-CONSUMING FURNACES.—Captain F. J. Chéry, of the Imperial Engineers, Paris, provisionally specified an invention which has for its object improvement in steam-boiler and other furnaces, whereby the heat and gases evolved from the fuel are more perfectly consumed than in furnaces of the ordinary construction, and by supplying the fuel in small quantities, and igniting it on the upper surface as it enters and progressively advances into the furnace, a great saving of fuel is effected. For this purpose it is preferred to mount the fire-bars in a frame supported on wheels, on which it can move to and fro on a tram or railway into and out of the ash-pit, and part of the series of fire-bars forming the fire-grate are capable of moving a short distance to and fro on the frame independently of the other half of such bars, each series being composed of alternate bars; at the front or entrance to the furnace an iron plate is fixed just above the surface of the fire-bars, and from it a vertical plate rises, which forms part of a chest or hopper to receive the supply of coal or fuel, which is forced into the furnace by the movement of the fire-grate to the back part, were currents of cold air from the ash-pit are admitted near the bridge to perfect the combustion.

PREPARATION OF CLAY.—An invention has been patented (but the patent has been permitted to lapse) by Mr. Chamberlain, of the Sandford Estate Pottery Works, Wareham, Dorset, which consists in the preparation of the clay in the stage after it has been mixed, and while in a thick liquid state, technically termed slip, for the purpose of depriving it of its superfluous moisture, so as to render it fit for the potter. Various systems have been introduced for this purpose with more or less advantage, but they are objectionable on the score of expense. Mr. Chamberlain prepares a tank having a layer of plaster of paris over its bottom, into which tank the slip is poured; this tank is in connection with any convenient exhausting apparatus; the plaster of paris readily absorbs the superfluous moisture from the clay, whilst the exhausting apparatus being put into operation will again exhaust or deprive the plaster of paris of the water drawn from the clay; or, in place of exhausting the moisture, it may be driven off by the introduction of hot air.

Meetings of Mining Companies.

KELLY BRAY MINING COMPANY.

An ordinary general meeting of proprietors was held at the offices of the company, Austinfriars, on Thursday.—Mr. JOHN FIELD in the chair.

Mr. E. KING (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. The accounts, up to the end of June, showed—

Balance last audit	£ 17 6 10
April mine cost, merchants' bills, &c.	445 11 7
May ditto	427 0 1
June ditto	407 7 0 = £1297 5 6
Sales of ore	£789 0 8
Calls received	486 4 11 = 1275 5 7

Leaving debit balance £ 19 11

The CHAIRMAN said that before reading the report of the agent he might, perhaps, mention that the committee had thought it advisable to take a second opinion with respect to the prospects of the eastern mine, and had, consequently, engaged Capt. W. Rich to inspect the mine, who, it would be seen, to a certain extent confirmed the statements made by their own captain, although he did not, perhaps, entertain quite so sanguine an opinion as to its prospects.

The report of the agent was then read, as follows:—

Aug. 13.—The 125 west has been communicated with the pitch in the bottom of the 115 by a rise, which has drained the bottoms, and also very much improved the ventilation, and instead of the ore being drawn up to the 115 by manual labour, it comes down to the 125, and is drawn to surface by the steam-whim. Here we have many fathoms of ore ground laid open, which is working by four men, at 10s. in 11, tribute, and the men are earning fair wages. In the 75 east we have sunk a winze on the pitch in back of the 85, which has laid open tribute ground, and also given good ventilation in both levels—the 85 and 75. We have again sunk the 75 east, in which the lode is 2 ft. wide, yielding 1 ton of ore per fm., worth 5L. per ton. Since the 125 has been held to the pitch in back of the 115 we have put the same pair of men to drive the 55 east, in order to get under the ore ground which was driven through in the 45 east, and many hundreds of tons of ore returned. The lode in the before-named end is about 1 ft. wide, composed of quartz, mica, blende, and stones of copper ore, and the ground is easy for exploring—at 6L. per fm. The tribute department is looking somewhat more encouraging than it hitherto has.—Eastern Mine: The lode in the 70 east is about 1 ft. wide, yielding occasionally stones of ore; a much more promising lode was found in the level above, carrying well-defined walls, and embedded in a congenial stratum, which is easy for exploring—set to six men, at 6L. 15s. per fm., one month stent. Our idea is to push on the above end with all speed, in order to get east under the ore ground which was driven through in the 60, about 20 fms. ahead, but we calculate to meet with the same run of ground before we get so far east in the 70, for the reason the ore ground dips west towards the shaft. We have commenced a winze in the 60 east, about 33 fms. wide, yielding 1 ton of ore per fm., worth 5L. per ton. Since the 125 has been held to the pitch in back of the 115 we have put the same pair of men to drive the 55 east, in order to discover the run of ore ground as we proceed in depth: the lode in the above pitch is 2 feet wide, and in the eastern end of it there is a branch of ore 6 inches wide, dipping west, which we hope shortly will be all the length of the winze, if so, we shall be opening valuable ground, the ore being of a rich quality. In the past quarter the 60 fm., level has been extended east about 13 fms., and now east of shaft about 60 fms., in which the lode is split into two parts at present, and looking at the unsettled state of the ground, we judge there is something not far ahead, either the elvan course or a cross-course. The above-named end has been driven upwards of 30 fms. over several good bunches of ore, which have been discovered in the bottom of the drivage, so that there is every reason to expect good results in the 70, the ground being of a congenial character for the production of rich copper ore. I estimate the cost for the coming quarter will be about 400L. per month, and the returns from 60 to 70 tons of ore per month; but if there is a course of ore met with in the eastern mine, the quality will be much better than it hitherto has been. The machinery is all in good working order.—S. JAMES.

The report of Capt. Rich stated the prospects at the old mine were not very cheering.

The SECRETARY then read a note which had been received that morning from the agent, to the effect that the lode in the winze sinking from the 60 to the 70 had improved, and was then being set to sink at 10s. in 12.

The CHAIRMAN having moved the adoption of the report and accounts,

A SHAREHOLDER thought, from the report of Captain Rich, it appeared quite clear that the old mine was not worth a very great deal.

He was of opinion that the ore ground should be taken away, when it would be a matter for future consideration whether the pitwork ought not to be pulled up. From the statement of their agent, which was borne out by Captain Rich, the eastern mine was one of considerable promise; and that it was evident, as the lode was nearing the granite or elvan course, some rich deposit of ore would be discovered. He, therefore, thought the operation at that point should be pushed on with vigour.

The SECRETARY enquired if the lode ran perpendicularly or obliquely?

The SECRETARY said there was a slight underlie. It was the opinion of Capt. James that it dipped westward, in which case it approached nearer to the cross-cut; and Capt. Rich recommended the driving of the 60 for 10 or 15 fathoms.

Mr. RICHARDS thought it could not be satisfactory to the proprietors to know that both their agent and Capt. Rich spoke very favourably of the eastern mine. They attached great importance to the fact that they were approaching the granite and the elvan course.—The report was then received and adopted, and the accounts passed and allowed.

The committee were re-elected, and the auditor was re-appointed.

A vote of thanks to the Chairman was passed, when the proceedings terminated.

WHEAL GRENVILLE MINING COMPANY.

An ordinary general meeting of shareholders was held at the company's offices, George-yard, Lombard-street, on Wednesday.—Mr. W. H. CUELL in the chair.

Mr. J. WATSON (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. The accounts showed—

Balance last audit	£ 21 4 5
Ore sold	896 17 9
Calls received	797 2 3
Bankers' commission and interest	1 2 3 = £1716 6 8
March mine cost, &c.	£489 15 6
April ditto	432 6 3
May ditto	346 6 8
June ditto	340 17 3
Sundries	20 10 6
Directors' fees	42 0 0
Amount paid on account of Deep Level Mine..	22 12 1
Bankers' commission, &c.	6 2 0 = 1708 10 3

Leaving credit balance £ 7 16 5

The balance of assets over liabilities was 4110L.

The CHAIRMAN said that the last report received from the mine appeared in the *Mining Journal* of Saturday last, which had doubtless been perused by the shareholders with interest and satisfaction.

He was glad, however, to state that Mr. T. P. Thomas was present, who would furnish the meeting with every fact connected with the company,

as well as regards its present and its future position.

It was with the greatest pleasure he informed proprietors that nothing could be more satisfactory than the last account from the mine—commercially and financially.

They had a balance of assets over liabilities of 4110L., and the whole of their pumping, crushing, and drawing-machinery had been erected, and the mine was now in an efficient working condition.

Everything was paid for, and the mine itself was as rich as it could be.

Hitherto the only drawback had been a doubt with respect to the scarcity of water, but by the plan at present being adopted they were looking to the lower valley for any quantity of water that might be required.

The mine at the present time was quite capable of returning 50 tons of ore per month, and they believed that quantity could be gradually increased.

But assuming their returns to be 50 tons per month, at 12L. per ton, that would realise 600L., and estimating their cost at 300L. per month, their capital being 10,000 shares of 1L. each, there would be left for dividend about 35 per cent. upon the year.

As they had the advantage of the presence of Mr. Thomas, he would ask that gentlemen to detail to the meeting the actual position and prospect of the undertaking.

He could not, however, conclude his remarks without congratulating the shareholders upon the improved position of their property.

Mr. T. P. THOMAS said it was with no small pleasure he informed proprietors that since the last meeting considerable improvement in the mine had taken place.

The last occasion he had the pleasure of meeting proprietors he stated they had met with a

ing). There was a bill of Messrs. Harvey and Co. (139f. 0s. 7d.) charged twice, in two co-sheets following.

Mr. HARVEY asked whether Captain Pryor stated that Messrs. Harvey and Co. had charged the same bill twice over?—Capt. PRYOR said that that had to be discovered; he asked them to refer the matter. He would hand Mr. Harvey the two sheets in which the items were charged.

Mr. HARVEY would admit that there was unquestionably an error somewhere, and no one would be more ready to get it rectified than himself.

Mr. GOATLEY was not so certain that there was an error; it appeared to him that part of an account had been settled with Messrs. Harvey and Co., and that the remainder was brought forward and included in the second bill.

Capt. PRYOR urged the necessity of having the accounts re-opened and investigated.

Mr. HARVEY would willingly consent to that, but as Capt. Pryor had upon previous occasions disputed the charges made for the engine, he would remind him that there was a contract entered into of price and weight for the engine, and the price list then agreed upon was in the purser's possession.

Capt. PRYOR had never seen any contract, and disputed its existence.

The CHAIRMAN explained that a provisional verbal (he believed) contract was entered into by the promoters and Messrs. Harvey and Co., to supply an engine at a certain price, and that at the first meeting of the adventurers after the constitution of the company a resolution was passed confirming the contract. The question, therefore, appeared to him to be a question of law—was there a contract or was there not? This, as well as the question relating to the accounts, could probably be settled by the appointment of a committee to examine into the whole matter.

It was ultimately resolved that Messrs. Pryor, Harvey (or any member of the firm), and T. W. Robinson, of Hayle, be the committee for "going into" all matters relating to the accounts from its commencement in June, 1860 to the end of July, 1861; and that in the event of disagreement reference be made to Mr. R. Davey, M.P., for his decision. To provide against any possible difficulty which might arise from refusal of any party to act or otherwise, it was also resolved that in the event of the report of the committee not being made within two months the resolution should be re-considered.

WHEAL HOPE MINING COMPANY.

At the meeting of adventurers, on Thursday,—Mr. J. Y. WATSON, F.G.S., in the chair—the accounts showed liabilities over assets 328*l.*, and a call of 5*s.* per share was made. The treasurer reported that since the last meeting the contract then ordered to hire an engine had been carried out, and a 20-in. cylinder engine hired of Mr. Michell, at 8*s.* per month, with the option of purchase (in which case hire would be deducted). The Chairman explained that a house had to be erected for this engine, which, with the pit-work, &c., had made the liabilities heavier than he had expected, and the manager was anxious to get the engine to work before calling a meeting, that he might be able to report more fully upon the prospects of the mine, which was situated in a rich district, had returned very large quantities of rich silver-lead, and would probably make returns again before the next meeting. The manager, Mr. W. H. Reynolds, has carried on a large interest in the mine, and has not received any salary, wishing to show his great confidence in the ultimate success of the undertaking. There are only 14 shareholders in the mine, and he hopes before long they would be rewarded for their outlay by a good price for the shares, which ought to bear a good price, and become more known in the market. The following is the manager's report:—

Aug. 14.—Since the last meeting of the adventurers we have erected a 20-in. cylinder engine, which is working exceedingly well, and up to this date we have drained the mine a few feet below the 14. We have commenced driving south at this level, on a counter lode, which is 10 or 12 in. wide, made up of spar, mastic, and blende, and in 5 or 6 fms. we shall cut the south lode, which has yielded good leady work at the adit, especially about the intersection with the counter lode, and we naturally expect a greater development at this point. We expect to be able to begin a cross-cut towards the south lode, at the 28, in nine or ten days. On the old lode, we have set a pitch east of the slide, at 13*s.* 4*d.* in 17*f.*, and men are asking for pitches at the 14. We shall begin at once to cross-cut to this lode east of the slide, at this level, and as we have led gone down in the bottom of the adit, east of the slide, we think there is here a great chance of a discovery. I am told that two of the deeper levels are driven westward close to what was formerly the boundary, with a good load of lead in each; and the ground west of what has been taken by another party led to a quarrel, which resulted in stopping the mine, but this ground is now secured to the present company, and is a most valuable addition. The monthly cost has necessarily been higher than previous months, owing to the erection of engine and other work necessary to the working of the mine, but the machinery and heaviest of the pit-work being now supplied, a short time, and comparatively small outlay, will test the important points before us, and I believe make very important discoveries. Few mines appear to me to present such chances of successful results, and I think that, at no distant day, this once rich mine will again take an important position. —W. H. REYNOLDS.

GREAT NORTH TOLGUS MINING COMPANY.

A meeting of shareholders was held at the company's offices, Gresham House, on Monday, Mr. W. P. PAULI in the chair.

The notice convening the meeting having been read,

The CHAIRMAN said since the last meeting took place the committee then appointed had been carrying out the arrangements proposed. With regard to the shares which had not been paid upon, an arrangement had been made which would probably result in their sale at a price which would go a long way in clearing off the existing liabilities against the mine; and the present meeting would not have been held at such an early date, when the arrangements referred to were not in so forward a state as could have been wished, had it not been absolutely necessary to raise a certain sum of money to meet certain claims, of no very great amount, for which proceedings had been commenced in the Stannaries Court.

Rev. Mr. BAGGE enquired the number of shares which had been recovered?—Mr. MILSTED replied about 1400, leaving about 100 more to come in; upon a proportion of those shares 2*s.* 6*d.* was owing, but the larger proportion by far were shares upon which the whole amount of calls was due.

Rev. Mr. BAGGE enquired by whom those shares were taken up?—A SHAREHOLDER thought that it was not competent for any proprietor to put such a question.

Mr. SPARO said when he took charge of the company there was scarcely a legitimate shareholder connected with it. It was much to be regretted that a property possessing such excellent prospects should be in its present position. Each must feel that the moment operations were resumed successful results would be realised; and, therefore, their first consideration should be what was the best course to adopt to bring about that issue. For his part, holding one-third of the undertaking, and representing three-fourths, he was strongly of opinion a call should be made at the present meeting to relieve the property from its present unfortunate position.

Rev. Mr. BAGGE thought the main question was, did the prospects of the mine justify the expenditure necessary for its development?—Mr. MILSTED considered there could not be two opinions upon that subject. All the practical authorities who had inspected the property had expressed the greatest confidence in the successful development; and there had been recently some important discoveries in the adjoining mines, Old Tolgus and North Downs, upon the same lodes that traversed the Great North Tolgus sett. He believed the property held out more than ordinary chances of success; the general opinion in the country was that, of all the mines in that district none more deserved to be developed than Great North Tolgus. It would be madness on the part of the present proprietors to determine upon giving up the sett; but if it should be so decided, its development would not be dormant one day, for there had already been a great many applications for the property; and, irrespective of the very unusual prospects which it presented, if it should ever come into the hands of different parties, he should, upon the old adage—"You may find your money were lost it"—most certainly continue an interest in the undertaking. It appeared to have been forgotten by some shareholders that, as soon as the liabilities had been liquidated, and the operations at the mine resumed, so soon would it begin to yield returns which might be gradually and permanently increased.

Rev. Mr. BAGGE enquired the reason that two months had been lost?

Mr. JONES reminded the hon. proprietor that the fact to which he referred had been brought about entirely by the *laches* of the shareholders in not having supplied the capital necessary to continue operations.

Capt. DALE, in answer to a question, stated that when the mine resumed operations, returns would at once be made.

Rev. Mr. BAGGE would like to know the estimated cost for working the mine?—Mr. SPARO replied that entirely depended upon the scale of operations pursued. Proprietors must remember they possessed a very extensive sett, which contained a great number of lodes, to develop which simultaneously would absorb a large amount of capital.

Capt. DALE estimated that, to develop the mine upon a limited scale of operations, would incur an expenditure of about 100*s.* per month.

A SHAREHOLDER could not think that any operations, however limited, could be successfully prosecuted at so small an expenditure as 100*s.* per month.

Rev. Mr. BAGGE considered that most of the gentlemen present were accustomed to form an opinion as to the probable cost of conducting mining operations, and, therefore, their judgment was to be valued.

Capt. DALE recommended that the whole of the debts of the mine should be cleared off, and then if the proprietors chose to develop the mine upon an extensive scale of operations, it could be done judiciously and with profit, and at the same time they would open up a very large mine; but if they wished to conduct their operations upon a contracted scale, and explore one branch of ore, it could be done for about 100*s.* per month.

Rev. Mr. BAGGE considered that most excellent advice. Capt. Dale told them there were prospects to warrant them in developing the whole of the sett, but his opinion was that, under the present circumstances, about 100*s.* per month should be expended in labour cost.

Some discussion having ensued, during which several shareholders expressed a favourable opinion with respect to the prospects of the mine, the resolution was proposed that the minutes of the last meeting be confirmed, which, having been seconded by Mr. JONES, was put and carried.

A call of 10*s.* per share was made, when the proceedings terminated with the usual vote to the Chairman.

EAST KONGSBERG NATIVE SILVER MINING COMPANY OF NORWAY.

The second annual general meeting of shareholders was held at the offices of the company, Austrinfjars, on Tuesday,—Major-General PEMBERTON in the chair.

Mr. BODDY enquired if, in adopting the report, they confirmed all the points which it embodied, especially that paragraph which referred to the re-appointment of directors?

The CHAIRMAN said by the Articles of Association one-third of the directors, or as near thereto as possible, should retire from office; therefore, the two gentlemen who retired upon the present occasion were Capt. Magnus and Mr. Bigg.

Mr. HOLMES said a portion of the directors were only nominated by the shareholders at an extraordinary general meeting, but were appointed by the directors to fill up vacancies.

Mr. SEARBY contended that the whole of the directors, as an act of grace, ought to retire from office at the present meeting, for none of them had been appointed according to the Articles of Association. In the usual course of business, according to the Articles, it would have been two directors, but from the circumstances which had occurred it would cure all defects if the whole of the directors retired, and offered themselves for re-election.

Mr. HOLMES thought the best way to proceed to business was to move a resolution, as to whether Major-General Pemberton should continue in the chair. He then moved a resolution that he be voted to the chair.—Dr. BODDY seconded the proposition.

The resolution was accordingly put, and unanimously carried.

Mr. ELLERMAN (the secretary) then read the report, which had been in the hands of the shareholders several days. The accounts made up to June showed a cash balance of 99*l.* 10*s.* (He (the secretary) then read a communication from the mines, of which the following is an extract:—

The stamps have been at work for several days. We have crushed 174 lbs. (Norsk) of silver in two days. In my next I shall be able to inform you how many ounces of silver this quantity has yielded, and the cost for dressing the same. The stamps might answer well enough for mites and sciders, but for poor ores (malm) they will never pay costs. I will thank you to advise me if I am to send this silver to the smelt-

ing-house at once, or shall I wait till we have more. Mr. BORDAM has sent a report of all our proceedings since he assumed the management of the mining department to the sheriff of the district. There is no change to notice in any of the mines this last week. The small vein, or dran, in Sunds is still yielding native silver (scheide). Ramrud is poor, but the vein is considered hopeful by those who are considered judges of silver veins. At Neuse Giueck and Anna Sophia, you are aware, we are only driving levels in barren ground for interior operations.

Mr. GRANT (one of the auditors) said that the whole of the figures were perfectly correct, and vouch'd for every particular. As to the composition of the account, it went back to the incorporation of the company, and therefore, was not confined to the past year. The whole account had been remodelled, and was now submitted to proprietors in quite a different shape. They felt assured that the whole of the receipts and expenditure, from the formation of the company, had been inserted.

Mr. HOLMES thought that there had not been sufficient expenditure at the mines, while there had been too great an expenditure at home.

A SHAREHOLDER observed an item for law expenses of 8*s.* He wished to know if that included the recent Chancery proceedings?—Mr. GRANT (an auditor) said the accounts just submitted did not include that item, but it was not paid within the time included in that account; it had, however, been paid.

A SHAREHOLDER thought it would be satisfactory to the shareholders generally to know the balance in hand at the present moment, and the outstanding assets and liabilities.

The CHAIRMAN replied that the amount due upon calls was 46*l.*, and there was a balance in hand of bankers of 41*l.*

Mr. JAMES would like to know if there were any unpaid liabilities against that asset of 8*s.*—The CHAIRMAN said the only amount was a small sum due from the secretary for salary, and also to the directors.

Capt. MAGNUS, in answer to questions, stated that he did not believe the expenses could in any way be further reduced, but he reminded proprietors that the whole of the expenses both at home and abroad were standing charges, which would not be increased if they were producing tons of silver, and the whole of those charges must continue until the mine was brought into a producing state, which, they had good reason to believe, was not far distant.

The CHAIRMAN then proposed that the report be received and adopted, and the accounts be passed and allowed.

Mr. HOLMES objected to the passing of the accounts, upon the ground that it did not comprise the whole of the liabilities existing when the account was made up.

Mr. JAMES fully concurred in Mr. Holmes's objection, but not upon the grounds upon which he put it.

Capt. MAGNUS said that the account ought to state what had been spent and what had been received; but it was impossible to put down uncertain liabilities. In the present account there was no item which was a matter of estimate.

After some discussion it was unanimously resolved that the report and accounts be adopted, subject to an amendment of the accounts, showing the assets and liabilities up to the end of June; and that in future the accounts be sent one week before each meeting.

Upon the proposition of Mr. HOLMES, seconded by Dr. BODDY, the sum of 10 guineas was voted as a remuneration to the auditors.

Upon the question of the re-election of directors, the whole of the board agreed to retire, when the following gentlemen were appointed directors:—Major-General PEMBERTON, Messrs. S. H. BIGG, W. B. M. LYSLEY, J. LAURIE, G. SCARBY, and CAPT. MAGNUS.

A vote of thanks to the Chairman terminated the proceedings.

WORTHING MINING COMPANY.

The annual general meeting of proprietors was held at the company's offices, St. Helen's-place, on Monday,—Mr. CYRUS LEGG in the chair.

Mr. G. LAVINGTON (the secretary) read from the *Mining Journal* the advertisement convening the meeting. The report of the directors (an abstract of which appeared in last week's *Journal*) was taken as read.

The CHAIRMAN said he regretted the unavoidable absence of Mr. R. Hallett, the worthy Chairman of the company, and also one of their co-directors, who was prevented from being present on account of illness. The absence of their Chairman was the more to be regretted, because he would have been the better able to explain the situation and prospects of the company. He confessed that he met proprietors with some feelings of disappointment that the board had not been able to place in their hands a much more favourable report; for they had hoped that, although they might not have been able to state that they had a second Kapunda, they would upon the present occasion have declared a dividend upon the capital of the company. It was, however, exceedingly satisfactory to know that the general affairs of the company had during the past year considerably improved; and although they were not yet in a position to declare a dividend, he could inform proprietors that the company's raisings during the year would have covered the whole of the expenditure, but a large outlay had been incurred for the erection of permanent machinery, the construction of furnaces, &c., to meet which the colonial committee had been compelled to draw upon the regulus and ore on hand. They were told by their colonial committee, and also by their manager, in whose statements the most implicit reliance could be placed, that there were practically no limits to the quantity of ore that could be raised from the Bremer Mine. In order to render these returns the more remunerative and more convenient for shipment, smelting-furnaces had been constructed; the colonial committee having very properly limited their raisings, considering it useless to have a large quantity of ore at grass without having the means of reducing it. They had now in transit 47*l.* tons of regulus; and, as he had before stated, the amount realised upon the returns of the year had met the expenses of development; and, moreover, the board fully anticipated that, when the mass of their smelting-furnaces were increased, they would enter long realising that desired goal which they had been so long endeavouring to gain. The only other point to which he need refer was with respect to the reserve shares, which, it would be recollect, were in the hands of the directors upon the last occasion they met proprietors, when the capital of the company was reduced. Conformably with the power given by the shareholders, the directors, with the view to supply the necessary capital for the purpose of increasing the number of furnaces, issued those 8010 shares *pro rata* among the shareholders at the time when shares were quoted in the market about 19*s.* to 20*s.*, the price put upon them by the board being 17*s.* 6*d.*; but, for some reason or other, altogether unaccountable to the directors, the shares were not taken up so readily as could have been wished, or as had been expected. Out of the 2839 that were taken up, a very large proportion was taken by the directors themselves; and they now asked for further power to deal with the remainder, to issue them either as preferential shares bearing interest, or in such other way as the directors might conceive to be most conducive to the interests of the company. He concluded by moving the adoption of the report.

Mr. H. R. WORTON seconded the proposition.

Mr. JENKINS could not discover where the amount which had been received on account of that proportion of the shares which had been taken up was placed in the balance-sheet, nor did he see any reference to it in the statement of accounts.

The CHAIRMAN said that the amount was included in the instalment account.

Mr. JENKINS thought that the office expenses, which amounted to 430*s.*, were excessive.

The CHAIRMAN said in that item there were included the directors' remuneration, the secretary's salary, the rent of offices, and everything pertaining to the petty cash, &c.

Mr. JENKINS considered the reply very satisfactory.

The report and accounts were then unanimously received and adopted.

The CHAIRMAN said the next business was the appointment of directors in the room of those off icee who thus went out of office, but who offered themselves for re-election, were Messrs. W. G. JACKSON and C. R. ESSEX.

Being duly proposed and seconded, the retiring directors were unanimously re-elected.

Mr. ESSEX, having acknowledged the compliment, stated that he felt perfectly confident that eventually no shareholder would have cause to complain of the success which that undertaking would achieve. His friends in the colony, holding a very considerable stake in the company, continued to inform him, mail after mail, that the mine was progressing satisfactorily; stating nothing was desired but a little more time and a little more capital to bring it into a remunerative condition.

The SECRETARY, at the request of Mr. ESSEX, here read an extract from an Adelaide paper, detailing more particularly the position and prospects of the Bremer Mine, especially referring to the effective method adopted for the reduction of the ore. The writer of the article bore testimony to the great success which had attended the use of Appleton's stone-breaking machine, the employment of which effected an immense saving of labour, performing, when worked by a 5-horse power engine, the work of one hundred men, breaking down 100 tons of ore in twenty-four hours. By it 1 per cent. ore could be profitably reduced.

Messrs. J. B. ELKIN and A. REDGRAVE were re-elected auditors, fixing the remuneration for the past year at 30 guineas; with the thanks of the meeting for past services.

Mr. REDGRAVE thanked the proprietors for the evidence of their continued confidence in having re-elected them as auditors for the ensuing year. He felt it his duty to bear testimony to the very excellent manner in which the whole of the accounts were kept.

The CHAIRMAN said the next question was that relating to the remainder of the re-served shares. The board (as would be seen by the report) were about to ask for power to deal with those shares as they might believe most beneficial for the interests of the company. The board hoped they so far enjoyed the confidence of the proprietors as to feel they would do their best for the benefit of the company. The directors, therefore, asked for power to deal with those shares—to issue them either as preference shares, or otherwise—as they may deem fit. He would take that opportunity of observing that the statement made in the *Mining*

THE CENTRAL SNAILBEACH MINING COMPANY (LIMITED).

Capital £10,000, in 10,000 shares of £1 each.
Deposit, 2s. 6d. per share, payable at Messrs. Banks, Shrewsbury, upon application, which will be returned if no allotment be made to the applicant.

For detailed prospectus, see *Mining Journal* of July 7; and Messrs. Phillips and Dartington's report appeared in the *Journal* of July 14.

Prospectuses, copies of the report, and plans of the sett, with further information, may be obtained from Mr. Jos. M. DAVID DAVIES, or Mr. RICHARD WARDMAN, all of Snailbeach, Shropshire; Messrs. PHILLIPS and DARLINGTON, 26, Gresham-street, London; or from the undersigned, to whom all applications for shares are to be made. Early applications are requested.

SAM. HARLEY KOUGH,
Aug. 7, 1861. Shrewsbury and Chancery Stretton, solicitor to the promoters.

EAST WHEAL MARTHA MINING COMPANY (LIMITED).

Capital £15,000, in 6,000 shares of £2 10s. each.
£s. per share to be paid upon application, and £s. upon allotment. All future calls not to exceed £s. per share, and not often than quarterly.

DIRECTORS.
GEORGE SEARBY, Esq., Crown-court, Threadneedle-street, London.
EDGAR WILLIAMS YARBOROUGH, Esq., 14, Arundel-square, London.
JAMES LANE, Esq., 44, Threadneedle-street, London.

T. C. HAWKINS, Esq., 9, Broad-street, Oxford.
THOS. COOPER SMITH, Esq., Warrington-court, Throgmorton-street.

BANKERS—London and County Bank.
SOLICITOR—Frederick Wm. Snell, Esq., 1, George-street, Mansion House.

AUDITORS—Messrs. Cooper Brothers and Co., 13, George-street, Mansion House, London.

CONSULTING AGENT—Capt. Joseph Richards.

SECRETARY—Mr. E. EVANS.

OFFICES—23, MOORGATE STREET, CITY, LONDON, E.C.

The object of this company is to purchase and work the mineral ground lying between the Devon Great Consols and the Great Wheal Martha.

There are few instances of mining where success would appear to be more certain than in this case, as this mine is situated west of the Devon Great Consols, and east of the Great Wheal Martha. The success of the former mine is too well known to the public to require much comment, but it may be stated that it has returned in dividends nearly £1,000,000, on an original capital of £10,000. The Great Wheal Martha Mine is one of the most successful instances of an old mine being reworked, the company having sold in a few months ores to the amount of nearly £3500, and having at the present time about 1000 tons of ore broken and being prepared for sale, while the reserves in the different levels amount to more than 5000 tons, and there is no doubt the mine will soon commence paying good and lasting dividends. All this is the produce of one lode only, which has held continuously from the upper to the lower level, and is now in the bottom level 16 ft. wide, a fine course of ore. This lode is by practical men considered to be a continuation of the Devon Great Consols lode, and as the East Wheal Martha Mine is situated exactly between the two mines, there cannot be any doubt of this mine having the same lode running through the entire length of the sett, from east to west; and there is one great fact to be borne in mind, that the further the levels at Great Wheal Martha are driven east the richer the lode becomes; and as the lode is driven east and passes through this property, there can be no doubt of the mine proving as rich as its neighbours.

This mine will be drained to a considerable extent by the Great Wheal Martha, as the levels in that mine approach it eastward, a fact of the greatest importance as regards the expenditure and development of the mineral wealth contained in this property.

This mine has been worked and a large capital expended by a previous company, but having sunk their shafts down in a valley, where they were inundated with water from the higher ground above them, they were compelled to stop. They had just discovered that they had sunk their shafts too far south to cut the Devon Great Consols lode, which passes through the high ground above, and were making great exertions by driving a level northward to intersect this lode, but want of sufficient steam power, and the shareholders not being inclined to subscribe further, the mine was abandoned.

Arrangements have been made with the present proprietors for the purchase of this property, the proprietors to receive 2500 shares, free of all calls, and £1500 in cash, the latter to be returned to this company by an allowance out of the dues as the ores are raised and sold. This return to be made is a fact of importance, proving that the proprietors have every confidence in the mine making large returns, and bringing them in a large revenue.

Application for prospectuses and plans to be made to Mr. E. EVANS, 23, Moorgate-street, London.

The following is a report from Captain Joseph Richards, who, being well acquainted with the underground workings at the Devon Great Consols, must be well acquainted with the run of the lodes and their connection with this property, and quite capable of giving an opinion on the future prospects of this mine:

Aug. 3, 1861.—I beg to hand you my report on this mine. It is situated directly east and adjoining Great Wheal Martha, where large returns of copper ore are being made, and the Devon Great Consols is in a direct line east of East Wheal Martha, so that this mine may be considered to be in a very first-rate position: the great lode of Wheal Martha must run directly through the sett, as well as several other lodes of very great promise. There have been shafts sunk and levels driven in East Wheal Martha, and although they cannot now be seen until the water is let in, I am assured that the prospects were such underneath as might be fully expected from the very great and good appearance of the lodes at surface. I am fully justified in highly recommending East Wheal Martha as a mining property of very much more than ordinary value as a speculation, and I am of opinion that those who may invest therein will have no cause to regret it, but, on the contrary, have every reason to congratulate themselves on the advisable selection of this extensive and exceedingly tempting property as an investment, containing as it does the necessary elements of success. In addition to the very fine appearances of the lodes themselves, there are cross-courses and intersections thereof, with the lodes attendant on which are often found the most splendid and valuable courses of ore. I will conclude by advising you to commence operations as soon as you can manage to do so, and I am exceedingly sanguine of the results proving in every way all I have said and intended to convey relative thereto. If you will refer to my report on Great Wheal Martha of Oct. 3, 1859, you will perceive that the results are bearing out what I then said of that property, and in East Wheal Martha you have a mine the prospects of which are not exceeded in my belief in any mine in the two counties, and I unhesitatingly advise all and every one who can to take an interest therein.

JOSEPH RICHARDS.

FORM OF APPLICATION FOR SHARES.

Shares £2 10s. each. Deposit on application, 5s. per share.

To the Directors of the East Wheal Martha Mining Company (Limited).

GENTLEMEN.—Having paid £ to your credit at the London and County Bank, Threadneedle-street, City, I request that you will allot me shares in the East Wheal Martha Mining Company (Limited), and I hereby agree to accept such shares, or any less number that may be allotted to me, subject to the provisions of the Joint-Stock Companies Act.

Date..... Name..... Address.....

DODDS' IRON AND STEEL PATENT LICENSING COMPANY (LIMITED).

This company is PREPARED TO GRANT LICENSES on moderate terms for the USE of their PATENT FOR STEELING RAILS, POINTS, CROSSINGS, MACHINERY, and EVERY DESCRIPTION OF IRONWORK.

The process, which is exceedingly reasonable in cost, and gives the most extraordinary durability to the material, has been highly approved of by the following gentlemen, firms, and companies, several of whom have extensively adopted the valuable improvement:

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Applications for Licenses can be made to R. COOKE, Esq., at the company's offices, No. 7, Saxe-lane, London, E.C., where also testimonials and other information may be obtained.

INCRUSTATION OF STEAM BOILERS.—EASTON'S

PATENT BOILER FLUID EFFECTUALLY REMOVES and PREVENTS INCRUSTATION in STEAM BOILERS, WITHOUT INJURY to the METAL, with GREAT SAVING in FUEL, and with LESS LIABILITY to ACCIDENT from EXPLOSION. It is used by Her Majesty's Steam Storeships, Woolwich Arsenal, Honourable Corporation of Trinity House, Tower of London, India Store Department, by the principal Steam Packet Companies of London, Liverpool, Southampton, Hull, &c., and by engineers, builders, railway companies, and manufacturers throughout the country. Testimonials from eminent engineers, boiler makers, and manufacturers, with full particulars, will be forwarded on application to P. S. EASTON and G. SPRINGFIELD, sole manufacturers and patentees, Nos. 37, 38, and 39, Wapping-wall, London, E.

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Aberdeen, Mr. James F. Wood.

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Leicester, Mr. Benjamin Pochin.

Belfast, Mr. W. T. Matier, C.E.

Birmingham, Mr. Adam Dixon.

Chester, Mr. W. A. Rowland.

Devonport, Mr. Cornelius Boddy.

Dublin, Mr. Wm. Fith.

Froome, Mr. W. B. Harvey, Chemist.

Glasgow, Mr. W. Mutrie.

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PIPES.—These PIPES POSSESS all the PROPERTIES NECESSARY for the CONVEYANCE of GAS and WATER, and also for DRAINAGE PURPOSES—viz.,

GREAT STRENGTH, GREAT DURABILITY, and PERFECT INOXIDABILITY,

and being non-conductors are not affected by frost, like metal pipes.

They are proved to resist a pressure of 220 lbs. on the square inch (equal to 50 ft. head of water), are only one-fourth the weight, and considerably cheaper than iron pipes.

These pipes have been in use in France, Spain, and Italy nearly three years, where the demand for them is very great.

The opinions of the press on a public test at the Houses of Parliament, before a large number of engineers and other scientific gentlemen, may be had, with further particulars, at the office of the company, on application to Mr. ALEX. YOUNG, 12a, Cannon-street, London, E.C., where sample pipes may be obtained for trial.

India Office.

BY ORDER OF THE SECRETARY OF STATE FOR INDIA
IN COUNCIL, notice is hereby given that the DIRECTOR-GENERAL OF STORES FOR INDIA will be READY, on or before MONDAY, the 26th instant, to RECEIVE PROPOSALS in writing, sent up, from such persons as may be willing to SUPPLY—
COPPER SLIPS.

And that the conditions of the said contract may be had on application at the India Store Office, Cannon-row, Westminster, where the proposals are to be left any time before Two o'clock p.m. of the said 26th day of August, 1861, after which hour no tender will be received.

GERALD C. TALBOT, Director-General.

India Office, August 14, 1861.

BOROUGH OF LIVERPOOL.

TENDERS FOR SUPPLY OF STONE.—The Health Committee of the Borough of Liverpool are willing to RECEIVE TENDERS for the SUPPLY of STONE for PAVING and for CHANNELS, CURBS, and CROSSINGS, as also for FLAGGING the FOOTWAYS of the BOROUGH.

Full particulars as to the quantities likely to be required, and all other information, together with form of tender, may be obtained on application by letter to JAMES NEWLANDS, Esq., Borough Engineer, Public Offices, 2, Cornwallis-street, Liverpool. The committee do not bind themselves to accept the lowest or any other tender.

Tenders, sealed and endorsed "Tender for Stone," addressed Health Committee, to be delivered at the office of the Town Clerk, as under, on or before the 14th of Sept. next.

By order, W.M. SHUTTLEWORTH, Town Clerk.

Public Offices, Cornwallis-street, Liverpool, August 5, 1861.

In Chancery.

TO BE SOLD, BY AUCTION, pursuant to an Order of the High Court of Chancery, made in a Cause of FORMAN v. HARVEY, with the approbation of the Vice-Chancellor Sir John Stuart, LEASEHOLD MINE, called WHEAL ANNA, producing TIN and COPPER ORE, with VALUABLE PLANT attached, situate in St. Hilary, in the county of Cornwall, in One Lot, by Mr. JOHN LITTLE, the person appointed by the said Judge, at the Auction Mart, Bartholomew-lane, London, on Wednesday, the 11th day of September, 1861, at Twelve of the clock at noon.

Particulars and conditions of sale may be had gratis of Messrs. OLIVERSON, LAVIE, and PEACHEY, solicitors, 8, Frederick's-place, Old Jewry, London; or Messrs. DANGERFIELD and FRASER, solicitors, 26, Craven-street, Charing-cross, London; or Messrs. WORDSWORTH, GREATHAM, and BLAKE, solicitors, South Sea House, Threadneedle-street, London; or Mr. TAYLOR, Esq., solicitor, 7, Gray's Inn-square, Holborn, London; at the Auction Mart; at the Hotels, Marazion, Cornwall; and at the auctioneer, at his offices, in Redruth, Cornwall.

ALFRED HALL, Chief Clerk.

OLIVERSON, LAVIE, AND PEACHEY, Plaintiff's Solicitors.

VALUABLE and IMPORTANT ESTATE, containing about 225 acres, at HEDNESFORD and LEACROFT, in the PARISH of CANNOCK, STAFFORDSHIRE, including the celebrated HOTEL, the "CROSS KEYS," at Hednesford, HOUSES, and OTHER BUILDINGS in the village, and LANDS immediately in connection with and adjoining to the Hednesford New Colliery, the Cannock Mineral Railway, and the canal wharf and tramway now in course of formation by the Birmingham Canal Company.

MESSRS. E. AND C. ROBINS WILL SELL, BY AUCTION, on Wednesday, the 21st day of August next, at the Swan Hotel, Wolverhampton, at Four o'clock in the afternoon, the VALUABLE ESTATE, called the "CROSS KEYS," at HEDNESFORD, the principal part whereof is freehold and a small portion copyhold, containing about 225 acres, including the HOTEL, TRAINING STABLES, FARM, and OTHER BUILDINGS, occupied by Mr. John Wilkins and others. Also, various HOUSES, TRAINING STABLES, OTHER BUILDINGS, and LANDS in and about the village, and extending from the Cross Keys Hotel and Mr. Pigott's Hednesford New Colliery to the line of the Cannock Mineral Railway. The high road from Cannock to Rugeley passes through the estate.

The recently-constructed railways and canals have already advanced the neighbourhood, and occasioned an extensive application of land for villa and general building purposes. Public works in contemplation will confer still further benefits. The large quantity of coal raised on Cannock Chase, and particularly at Mr. Pigott's Hednesford New Colliery, adjoining this property, clearly indicates the existence of mines in the estate, and experienced practical miners have reported them of unquestionable quality and great value.

The enclosure of the wastes now in progress will, as in the case of other parishes that have already been enclosed, most materially alter and improve the character and value of the district. The estate will be first offered in one lot, but if not sold, will be immediately put up in about nine lots.

Particulars, with plan and conditions of sale, will speedily be prepared, and may be procured from Messrs. BARKER, BOWKER, and PEAKE, solicitors, 1, Gray's Inn-square, London; or Mr. PEAKE, land agent, Chartley Manor-house, near Stafford; Mr. BAILEY, mineral agent, the Pleck, near Walsall; at the Cross Keys at Hednesford; the Swan Hotel, Wolverhampton; and from E. and C. ROBINS, surveyors and auctioneers, New-street, Birmingham.

RUABON, DENBIGHSHIRE.

SALE OF VALUABLE LANDS, COAL FIELD, AND SHARE OF TITHE RENT CHARGE.

MR. JOHNSON WILL SELL, BY AUCTION, at the Wynnstay Arms Hotel, Ruabon, on Friday, the 6th September next, at Five o'clock in the afternoon (unless previously disposed of by private treaty, of which due notice will be given), subject to conditions to be produced at the time of sale, and in the following or

such other lots as shall then and there be determined upon:

Lot 1.—All that MESSUAGE or TENEMENT, FARM, LANDS, and PREMISES, called TY-MAWR, situate in the township of Ty Mawr, in the parish of Denbigh, containing by admeasurement 41 a. 0 r. 12 p., or thereabouts, together with the VALUABLE

BEDFORD IRONWORKS, TAVISTOCK.

NICHOLLS, WILLIAMS, AND CO. have generally a GOOD STOCK of SECOND-HAND MINING MATERIALS FOR SALE, including iron-work for a water-wheel, 40 ft. diameter, 2½ ft. breast. They also MANUFACTURE STEAM ENGINES of every description on the newest principle. Castings and wrought-iron work made at the shortest notice. Machinery sent to all parts of the world. Steam boilers and chains warranted of the best description.

BASTIER'S PATENT CHAIN PUMP, APPARATUS FOR RAISING WATER ECONOMICALLY, ESPECIALLY APPLICABLE TO ALL KINDS OF MINES, DRAINAGE, WELLS, &c. J. U. BASTIER begs to call the attention of proprietors of mines, engineers, architects, farmers, and the public in general, to his new pump, the cheapest and most efficient ever introduced to public notice. The principle of this new pump is simple and effective, and its action is so arranged that accidental breakage is impossible. It occupies less space than any other kind of pump in use, does not interfere with the working of the shafts, and unites lightness with a degree of durability almost imperishable. By means of this hydraulic machine water can be raised economically from wells of any depth; it can be worked either by steam-engine or any other motive power, by quick or slow motion. The following statement presents some of the results obtained by this hydraulic machine, as daily demonstrated by use:—

1.—It utilises from 90 to 92 per cent. of the motive power.
2.—Its price and expense of installation is 75 percent. less than the usual pumps employed for mining purposes.
3.—It occupies a very small space.

4.—It raises water from any depth with the same facility and economy.
5.—It raises with the water, and without the slightest injury to the apparatus sand mud, wood, stone, and every object of a smaller diameter than its tube.

6.—It is easily removed, and requires no cleaning or attention.

A mining pump can be seen daily at work, at Wheal Concord Mine, South Sydenham, Devon, near Tavistock; and a shipping pump at Woodside Graving Dock Company (Limited), Birkenhead, near Liverpool.

J. U. BASTIER, sole manufacturer, will CONTRACT TO ERECT his PATENT PUMP THIS OWN EXPENSE, and will GUARANTEE IT FOR ONE YEAR, or will GRANT LICENSES to manufacturers, mining proprietors and others, for the USE of his INVENTION.

OFFICES, 19, MANCHESTER BUILDINGS, WESTMINSTER, LONDON, Oct. 10, 1859. Hours, from Ten till Four. J. U. BASTIER, C.E.

TO BRASSFOUNDERS, ENGINEERS, REFINERS, &c. THE PATENT PLUMBAGO CRUCIBLE COMPANY beg to CALL the ATTENTION of all users and shippers of melting pots to the GREAT SUPERIORITY of the PATENT CRUCIBLES, which have been used during the last three years by some of the largest melters in England and abroad. In addition to their capabilities of melting an average of from 35 to 40 pounds, they are unaffected by change of temperature, never crack, but can be used till worn out, requiring only one annealing for several days' work, and become heated much more rapidly than ordinary pots, EFFECTING thereby a SAVING of more than FIFTY PER CENT. in time, labour, fuel, and waste. The Patent Plumbago Crucible Company also manufacture and import clay crucibles, muffles, portable furnaces, sublimate pans and covers, glass pots, all descriptions of fire-standing goods, and every requisite for the assayer and dentist.

Also, sole proprietors of fine POWDERED PURE FLOUR PLUMBAGO, which they can confidently recommend for anti-friction purposes, being an impalpable powder, and warranted perfectly free from grit and any impurity. For ordinary polishing purposes it will be found superior to any of the black leads offered.

Price, £27 10s. per ton; 30s. per cwt. Samples of 28 lbs. forwarded on receipt of 2s. Packages free.

For Lists, Testimonials, &c., apply to the BATTERSEA WORKS, London, S.W.

AUSTRALIA AND NEW ZEALAND WHITE STAR EX-ROYAL MAIL CLIPPERS, SAILING FROM LIVERPOOL TO MELBOURNE on the 1st and 20th of every month.

* Passengers holding Victoria passage warrants will be forwarded to Melbourne by these vessels.

Ship. Register. Burthen. To sail. COMMODORE PERRY .. Melbourne & Auckland 2016 6000 Aug. 20. BLUE JACKET Melbourne 1659 4750 Sept. 20. LORD RAGLAN Melbourne 1900 5500 Oct. 20.

The celebrated clipper, *Commodore Perry*, will be dispatched for Melbourne and Auckland, in New Zealand, as above. She is one of the fastest clippers afloat, and her accommodations for all classes of passengers are superb.

For freight or passage apply to the owners, H. T. WILSON and CHAMBERS, 21, Water-street, Liverpool; or to GRINDLAY and Co., 124, Bishopsgate-street, and 55, Parlia-ment-street; or SEYMOUR, PEACOCK, and Co., 116, Fenchurch-street, London.

Willcox's Australian and New Zealand hand-books sent for two stamps.

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N.B.—Emigrants should take through tickets. Government pamphlet, &c., free on application at the London office.

JOHN M. GRANT, Sea-21, Old Broad-street, London, E.C.

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The IRON CIRCULAR gives the state of the Market with respect to Pig and Malleable Iron; the Official Prices of Bars, Hoops, Sheets, and most other kinds of Staffordshire Iron; a Report of the Iron Trade throughout England, Scotland, and Wales; the Scotch Pig Market up to the close of the market on the day of publication; the Closing Price of the Funds and the principal Railway Stocks up to two o'clock the same day; a Monthly Report of the Iron Trade in France; a Weekly Report of the Money Market, London Discount Market, state of the Foreign Exchanges; the Weekly Return of the Bank of England; the Monthly Return of the Bank of France; a correct Weekly Account of all the Gold Ships at Sea, London Bound; likewise an accurate Weekly Return of all the Gold and Specie received during the week; a Report of the Copper Market, with prices of all kinds; a Report of the Tin Market, with present prices, and the same of Lead and Spelter, every week. The IRON CIRCULAR likewise contains an account of all Failures, Dissolutions of Partnerships, Changes in Firms, Stoppage of Works, Works Recommencing, New Works, or those in course of erection; in a word, the CIRCULAR gives every information connected with the Iron Trade which Mr. GRIFFITHS, whose well-known connection with it, considers would be useful and acceptable to the Ironmaster, the Merchant, the Shipper, Banker, or any other Buyer of Iron. The same may be said with regard to Copper, Tin, Spelter, and Lead. A Tabular Statement will be published with the CIRCULAR every three months, showing the number of Furnaces in and out of blast in all the Iron Districts, the quantity of Iron made, and likewise the quantities of Coal and Ironstone consumed in its production.

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For particulars and references, apply to the makers, A. and T. FAR, Temple-gate Works, Bristol; or to Mr. Jos. RIDEN, Basinghall-street, Leeds.

WIRE-ROPE TESTING.

PUBLIC TEST of A. J. HUTCHINGS AND CO.'S PATENT WIRE-ROPE at LIVERPOOL, FEBRUARY 27, 1861.

[From the *Daily Post* of March 1, 1861.]

On Wednesday, the 27th of February, a series of EXPERIMENTS on WIRE-ROPE took place at the Corporation Testing Works, King's Dock. The specimens tested were manufactured by the well-known firm of A. J. HUTCHINGS AND CO., of Millwall, London, the Contractors to the Lords of the Admiralty and various foreign Governments, the character of whose rope is well known in this country, as well as all parts of the Continent. Capt. DUCRAFT, of H.M.S. *Hastings*, and a number of other gentlemen connected with shipping, were present to witness the experiments, all of which were considered highly satisfactory, and in every respect sustained the reputation of the manufacturers. The following are the results of the experiments:

An 8 in. rope bore 70 tons WITHOUT BREAKING.

Circumference and breaking strain.

2½ | 2½ | 3 | 3½ | 4 | 4½
10½ tons | 14 tons | 20 tons | 27 tons | 29 tons | 32½ tons | 45½ tons

N.B.—The 2½, 3, and 4 in. ropes were the sizes actually tested. The remaining sizes and strains are comparative.

THE ABOVE ROPE ARE FOR COLLIERY USE.

Size. Hutchings and Co.'s wire. Newall and Co.'s Test of Oct. 29, 1860. Garnock, Bibby, and Co.'s Test, Oct. 29, 1860.

Inches. Tested Feb. 27, 1861.

2 | 5 tons 15 cwt. 7 tons 15 cwt. 8 tons 16 cwt.

2½ | 11 " 14 " — —

3½ | 16 " 10 " — —

3½ | 22 " 8 " — —

3½ | 23 " 10 " 16 " 10 " 18 " 5 "

4 | 29 " 10 " 18 " 15 " — —

4½ | 37 " 15 " 26 " 10 " — —

N.B.—The 2½, 3, and 4 in. ropes were the actual sizes tested. The remaining sizes and strains are comparative.

The above tests certified by Mr. McDonald the Superintendent of the Corporation Testing Works, Liverpool.

HEMP AND WIRE-ROPE.

JOHN STEPHENS AND SON, HEMP AND WIRE-ROPE WORKS, ASHFIELD, FALMOUTH, CORNWALL.

MANUFACT

